The Bristol Medico-Chirurgical Journal.

"Scire est nescire, nisi id me
Scire alius sciret."

MARCH, 1906.

ANTI-TUBERCULOUS VACCINES AND SERA.[1]

BY

J. M. FORTESCUE-BRICKDALE, M.A., M.D. Oxon.,

Senior Physician to Out-Patients and Pathologist to the Royal Hospital for Sick Children, Bristol.

THE general abandonment of Koch's first method of obtaining a specific immunising agent against tuberculosis has by no means acted as a check to further research along the same lines; on the contrary, if I may borrow a simile from the subject-matter of this paper, it seems to have acted like the injection of a toxin which produces a large number of bodies tending to neutralise its action. In fact, about twenty substances have been prepared since 1890, and more or less largely used. These fall into two great groups: the tuberculins which contain poisonous substances prepared from tubercle bacilli, and are intended to produce active immunity, and the anti-tuberculous sera, which, withdrawn from immunised animals, are intended to act as anti-toxins, and thus to secure a passive immunity.

[1] A paper read before the Bristol Medico-Chirurgical Society, Nov. 8th, 1905.

The tubercle bacillus when grown on artificial media produces very little in the way of soluble toxins or extra-cellular toxins; it can, however, by various methods be made to yield certain toxic substances, the chief of which are known as tuberculo-proteins and tuberculo-plasmins.

Tuberculo-proteins are fairly stable bodies, and can be extracted from media in which the bacilli are grown; the tuberculo-plasmins have to be obtained from actual bodies of the bacilli by some crushing process. Other substances are present in all tuberculins; and some of these undoubtedly contribute to the reaction produced, but it has not been shown that they are directly concerned in the immunising process.

Tuberculins.—Koch's old tuberculin (1890) is a glycerine extract of the bodies of the bacilli, together with some of the substances produced by them when grown on an artificial medium. The bacilli used are not virulent, but a long time is allowed for their growth and extraction, so that the preparation may be considered a powerful one. It is a sterilised and filtered preparation, and keeps well. It does not immunise animals against living cultures, but only against their metabolic products. Its action, as is well known, is local and general, and has been variously explained; it is obviously complicated, as it depends upon the presence of tuberculous foci in the body, and does not occur typically, at any rate in healthy subjects. Ehrlich[1] thought it due to some action on the intermediate zone of cells between the active foci and the healthy tissues. Marmorek[2] considered it a sensitiser of the bacilli, and not a true toxin. By its action he thought the tubercle bacilli were sensitised or stimulated to produce more toxin. Thus he explained the fact that it fails to produce symptoms in advanced cases, because then so much toxin is already being formed that no effect is produced by a comparatively small increase. Behring[3] has recently announced that its action is upon the product of the bacilli which he calls T.C., a remarkable substance capable of combining with and acting on the cells of the host. Wright[4]

[1] Ehrlich, quoted by Bosanquet, *Serums, Vaccines, and Toxines*, 1904.
[2] Marmorek, *Lancet*, 1903, ii. 1642. [3] Behring, *Ibid.*, 1905, ii. 1126.
[4] Wright, *Ibid.*, 1904, ii. 1138.

classes the active principle of tuberculin among the tuberculotropic bodies, that is bodies which produce within the tissues substances capable of combining with the tubercle bacilli.

Chemically the old tuberculin, which has been analysed by Hunter and others, contains proteins; it is now thought that the reactions are not specific for tuberculin, but may be produced by any of the bacterio-proteins, and even by allied bodies not derived from bacteria at all.[1]

The proteins are not the only substances contained in the old tuberculin. Hunter[2] found among other bodies alkaloids, and in 1891 he devised a method for separating the proteins or albumoses as he called them. These he injected instead of tuberculin, and claimed good results. A few cases were published in 1891 by himself and Watson Cheyne. Hahn's[3] method is similar to Hunter's; but if, as is now thought, the proteins are only carriers of the active principle, they would be useless in a perfectly pure form.

Klebs,[4] Ruck,[5] Denys,[6] and Spengler[7] have all devised methods for preparing tuberculins which may be considered as modifications of Koch's original tuberculin. Klebs' preparations (1894) are known as tuberculocidin and anti-phthisin (a concentrated form), and are mainly distinguished by being prepared by precipitation processes without the aid of heat. Ruck's (1896) is a watery filtered extract of bacilli, and Denys's (1902) is a similar preparation. Spengler's tuberculin (1904) is prepared from bovine bacilli, and is said to be less toxic than Koch's old tuberculin.

In 1897 Maksutow[8] prepared an extract from tuberculous tissues of guinea pigs, said to be capable of immunising experimental animals. It was thought to more nearly approach the real toxins of disease than preparations derived from artificial cultures.

[1] Krehl and Matthes, *Arch. f. exper. Path. u. Pharmakol.*, 1895, xxxvi. 437.
[2] Hunter, *Brit. M. J.*, 1891, ii. 169.
[3] Hahn, quoted by Batty Shaw, *Lancet*, 1905, i. 926.
[4] Klebs, quoted by Bosanquet, *op. cit.* [5] Ruck, *Therap. Gaz.*, 1896, xx. 308.
[6] Denys, quoted by Batty Shaw, *loc. cit.*
[7] Spengler, *Deutsche med. Wchnschr.*, 1904, xxx. 1129.
[8] Maksutow, quoted in *Brit. M. J.*, 1905, ii. 966.

The next group of tuberculins are not merely extracts, but are obtained by crushing the bacilli before extraction.

(1) In 1897 Koch[1] produced three new tuberculins, TO, TA and TR. Two are useless, namely TO, which is too weak and contains proteins, and TA, which excites suppuration at the site of injection. TR is a watery extract of dried and crushed bacilli, obtained by repeated centrifugalisations after TO has been separated off. It differs from tuberculins of the type of Koch's old tuberculin in containing tuberculo-plasmin, which produces only a general reaction and immunises against the bacilli themselves. It is prepared from virulent cultures, and may be heated to 60° C. for an hour with advantage.

(2) Koch's new tuberculin (1901) is an emulsion of crushed and dried bacilli. As it was occasionally found to contain living virulent organisms it is now heated to 60° C. for one hour. It acts similarly to TR, though thought to be more powerful. It does not keep well.

The two remaining tuberculins are:—

Béraneck's tuberculin[2] (1904), which is a mixture of two substances. The first, or basi-toxin, consists of the extra-cellular toxins of the bacilli cultivated on a special medium; the second, or acido-toxin, is a filtered extract prepared with orthophosphoric acid from the bodies of the bacilli after the basi-toxin has been removed. Its active principle is said to differ from the tuberculo-proteins of Koch's original preparation. It is said to immunise guinea pigs, and to be bactericidal *in vitro*.

Sciallero[3] (1904) states that he has obtained an extract from virulent cultures containing a fatty substance to which the peculiar staining properties of the bacilli are due. He claims to have immunised guinea pigs to virulent bacilli by this preparation.

I will now briefly consider—

I. The experimental evidence as to the tuberculins.
II. The clinical evidence as to their value.
III. The practical limitations to their usefulness.

[1] Koch, *Deutsche med. Wchnschr.*, 1897, xxiii. 209.

[2] Béraneck, *Brit. M. J.*, 1904, i. 735.

[3] Sciallero, *Il Policlin*, Nov. 1904; abstract in *Brit. M. J.*, 1905, i., Epitome, No. 48.

I. (1) In the first place all tuberculins have been shown to possess some immunising power on experimental animals. Some, as has been already noted, immunise animals only against themselves, or, in other words, induce toleration; but some have been shown to protect against virulent cultures of bacilli. It is not, of course, possible to say that this effect will also be produced in man, as no direct experiments have been made, but there is perhaps a presumption that it is so. Nor is it certain that tuberculin represents all the toxic products of the bacilli which cause the disease, and that immunisation against tuberculin is the same thing as immunisation against tuberculosis.

(2) Evidence of increased agglutinating power in the blood after injections of tuberculin (TR) has recently been brought forward by Wright[1] and others. This is taken as showing increased powers of resistance, but it is not always coincident with clinical improvement, which sometimes precedes any heightened agglutinative power in the blood serum.

(3) There is evidence that an increase of cells containing eosinophil granules in the blood is an indication of resistance to the invasion of the tubercle bacillus. Gianasso[2] found that among forty-eight children examined an increase in eosinophil cells was commoner in convalescent and improving cases; this is supposed to be due to increased activity in the bone marrow. Erben[3] has shown that in cases with marked anæmia great decrease in the activity of the bone marrow occurs. As far as I know this test has only been applied to Behring's new preparation, when it gave positive indications.

(4) Probably the most important indication of the immunising power of tuberculin is found in the increased opsonic index in the blood which Wright[4] and others have shown to occur. He and Urwick employed Koch's TR, and have shown that after injection the phagocytes are able to consume more tubercle bacilli than before, owing to the development of opsonins. This rise is, however, preceded by a fall in phagocytic power. Similar phenomena occur in auto-intoxication

[1] Wright, *loc. cit.* [2] Gianasso, *Brit. M. J.*, 1904, ii., Epitome, No. 217.
[3] Erben, *Ibid.*, 1905, ii., Epitome, No. 159. [4] Wright, *loc. cit.*

with bacillary products in the ordinary course of the disease.[1]

II. The clinical evidence of the value of tuberculin is not easy to express statistically; most of those who have used tuberculin think that it does good in selected cases, especially when combined with hygienic or "sanatorium" treatment. Pottenger constructed a table showing the results with and without tuberculin in patients at sanatoria; Batty Shaw, using Pottenger's table, added other cases, and I have been able to collect some further reports, as shown in the following table:—

SANATORIUM CASES TREATED WITH TUBERCULIN.

AUTHOR.	REFERENCE.	CASES.	STAGE.	PERCENTAGE CURED.
Collected by— Batty Shaw ...	*Lancet*, 1905, i. 922 ...	656	I.	91
Trudeau	q. Bosanquet, *Op. cit.* ...	47	I.	41
Turban	*Ibid.*	86	I.	100
Würtzen	*Tuberculosis*, (Leipzig), 1904, iii. 53.	10	I.	100
Sawyer	*Therap. Gaz.*, 1905, xxix. 364.	14	I.	100
Moeller	*B.M.J.*, Epit., 1904, ii. No. 249.	1	I.	100
Lœwenstein and Rappoport.	*Deutsche med. Woch.* vol xxx. No. 23.	48	"Closed cases."	17·3
		862	...	88

SANATORIUM CASES TREATED WITHOUT TUBERCULIN.

AUTHOR.	REFERENCE.	CASES.	STAGE.	PERCENTAGE CURED.
Collected by— Pottenger	*Therap. Gaz.*, 1903, xxvii. 163.	611	I.	64

Denys[2] treated 174 cases by tuberculin alone without special hygienic treatment; 29 per cent. were cured and 42 per cent. greatly improved. Turban[3] has constructed a table

[1] Urwick, *Brit. M. J.*, 1905, ii. 172.

[2] Denys, quoted by Bosanquet, *op. cit.* [3] Turban, *Ibid.*

to show that resistance is permanently heightened by tuberculin. He treated 152 cases in the second stage without tuberculin, of which 70 per cent. were alive four years after; while of 48 treated with tuberculin 75 per cent. were alive. In the third stage, of 84 cases treated without tuberculin 50 per cent. were alive in two years, and of 21 treated with tuberculin 75 per cent. Grünbaum[1] has obtained satisfactory results with Koch's bacterial emulsion, and A. E. Wright[2] has reported similarly with TR. In cases of lupus Malcolm Morris[3] has recently stated that he considers it a useful adjunct to other treatment, and Neisser,[4] who has used the old tuberculin since its introduction, still believes in its value. Sir T. Anderson[5] in Dublin has used it with success when other measures have failed. Altogether I have found records of 65 cases, 58 of which were greatly improved or cured, 4 were partly cured, 2 slightly improved, and in 1 there was no improvement. Gerhardt and Senator[6] are of opinion that the old tuberculin is useful in tuberculous laryngitis, and recently Wright[7] and Hurry Fenwick have reported successful results with Koch's new tuberculin (emulsion) in cases of urinary tuberculosis. Warren Brown[8] has found TR valuable in localised tuberculous cystitis. Anderson[9] has published two cases of tuberculous peritonitis in children which were treated with old tuberculin, and were discharged well in three months; and also one case of tuberculous adenitis and one of Addison's disease in which very good results were obtained. Most of the published results refer to Koch's TR or his emulsion; but some success has apparently attended the less known preparations, such as Béraneck's.[10] In March, 1904, 60 out of 90 cases were said to have been improved; but in general these products have not

[1] Grünbaum, *Lancet*, 1904, ii. 886.

[2] Wright, West Kent Med.-Chir. Soc., April 8th, 1904; *Lancet*, 1904, i. 1127; *Clin. J.*, 1904-05, xxv. 54.

[3] Malcolm Morris, *Lancet*, 1904, ii. 1132.

[4] Low, *Scottish M. and S. J.*, 1905, xvi. 397.

[5] Anderson, *Brit. J. Dermat.*, 1905, xvii. 317.

[6] Gerhardt and Senator, quoted by Bosanquet, *op. cit.*

[7] Wright and Hurry Fenwick, *Lancet*, 1904, i. 935.

[8] Warren Brown, *Brit. M. J.*, 1905, i. 1089.

[9] Anderson, *loc. cit.*

[10] Béraneck, *loc. cit.*

been used sufficiently long for satisfactory statistical deductions to be made as to their value.

III. The limitations to the value of tuberculin are important, as no doubt ignorance of these, as well as improper usage, was the cause of the failure of Koch's first preparation. They may briefly be stated as follows:—

(1) Tuberculin is useless where the protective mechanism is worn out, as in advanced cases, and cannot respond to the stimulus of an active immuniser. This will be true whatever view is taken of the physiological action of the remedy.

(2) It is of little use in mixed infections, where pyogenic cocci are responsible for most of the symptoms.

(3) Koch's old tuberculin and similar preparations are contra-indicated in deep-seated lesions where the necrotic material formed by the local reaction cannot escape. It is uncertain, however, whether there is any actual danger of spreading the disease by liberating tubercle bacilli in the tissues.

(4) It has been observed that any considerable degree of fever contra-indicates Koch's old tuberculin, but not the bacterial emulsion.

Anti-Tuberculous Sera.—The earliest attempt to produce a passive immunity was that of Harricourt and Richet in 1890.[1] It was not successful, as they used the serum of a naturally immune animal, which is now known to have no anti-toxic power. Hirschfelder, in 1897,[2] introduced a substance named oxytuberculin. This, though prepared from tuberculin, is intended to act as an anti-toxin, and should thus be classed with the sera as a passive immuniser. It consists of tuberculin oxidised with H_2O_2, and is sterilised before use. Macfarland[3] in the same year tried the serum of an ass which had been immunised with tuberculin on fifteen cases of tuberculosis without definite result. Nicholls (1904), using Koch's TR as an immuniser, obtained a serum, but it was practically of little value. Fisch,[4] in the United

[1] Harricourt and Richet, *Compt. rend. Soc. de Biol.*, 1890, p. 310.
[2] Hirschfelder, quoted in *Brit. M. J.*, 1905, ii. 966.
[3] Macfarland, *J. Am. M. Ass.*, 1897, xxix. 359.
[4] Fisch, *J. Am. M. Ass.*, 1897, xxix. 882; 1898, xxx. 303; 1899, xxxii. 73.

States, produced a serum in 1898 prepared from horses injected with Koch's TR. I have only found records of 31 cases, of which 24 were considerably improved, but it is said to have been largely used in the United States.[1]

Maragliano,[2] in 1899, prepared a serum by injecting horses with a mixture of an aqueous extract of the bacilli and a preparation of toxalbumens from liquid cultures. The serum of the horses neutralises tuberculin, and is said to produce bacteriolysis *in vitro*. 2,900 cases have been published: in circumscribed apyretic cases 38 per cent. were cured, in circumscribed febrile cases 18 per cent., in diffuse tuberculous bronchitis 14 per cent., and in cases with cavities 5.6 per cent. These results, however, have not been confirmed by observers in other countries.

Marmorek,[3] in 1903, described a new serum, which has since been tried on a number of cases in this country and elsewhere. I have already alluded to his view that Koch's tuberculin is not the true toxin of tuberculosis, but merely a sensitiser of the bacilli. Acting on this idea, he made cultivations of a special strain of tubercle bacilli ("primitive" bacilli), which produce much less tuberculin than ordinary cultures, and differ morphologically from the full-grown type. Grown on special culture media, which are really unfavourable soil for the ordinary growth of the bacilli, this strain of "primitives" can be induced to form a new toxic substance, which Marmorek regards as the real toxin of the disease. He states that he has immunised experimental animals with this toxin, and that their serum contains anti-toxins. He admits that his results have not been quite constant, and that the toxin might with advantage be more powerful. Marmorek wished to test his serum on the most hopeless cases first, and then, if it failed here, to gradually try it in less and less severe cases, in order to find at what point its efficacy could first be detected clinically. His early results were much criticised in Paris. Dieulafoy[4] stated that he had

[1] Larned, *Therap. Gaz.*, 1905, xxix. 582.

[2] Maragliano, *Berlin. klin. Wchnschr.*, 1899, p. 1,073; *also* Cattle, *Practitioner*, 1905, lxxiv. 518.

[3] Marmorek, *loc. cit.*, and *Lancet*, 1905, ii. 1280.

[4] Dieulafoy, *Semaine Méd.*, Dec. 2nd, 1903.

tried the serum in 7 cases with no good result, and that he had failed to immunise guinea pigs with it. Hallopeau[1] was equally positive that it did no good to 7 patients, and in 2 he observed obstinate ulcerating nodules at the site of injection, which he believed were due to the toxins in the serum. Monod,[2] on the other hand, reported good results in glandular and localised cases. Latham, who has tried it in pulmonary cases, believes that it does good in some cases, and at the recent congress in Paris twelve observers spoke in its favour. It is apparently useless in very advanced cases of phthisis, in miliary tuberculosis and meningitis, and in mixed infections, but should be tried in moderately advanced phthisis and in tuberculous diseases of bones and joints, fistulæ and ulcers, and tuberculous inflammation of serous membranes. Marmorek states that it has done good in about three-fourths of the cases in which it has been tried, and that some of the failures occurred in patients who were *in extremis*. Others, again, are intolerant of serum-therapy. Much appears to depend on the mode of administration and the general technique; it is admitted that the anti-toxic power is not high, and that no standardisation of the serum is as yet possible.

Stephani,[3] who quotes no figures, says that out of a large number of cases distinct improvement occurred in half, symptomatic improvement in three-fifths, and in five cases rapidly advancing disease was checked. Habershon[4] stated that in certain moderately bad cases it had produced distinct improvement, but no actual cures had been observed at the Brompton Hospital. Levin[5] reported on 156 cases treated in Sweden with on the whole encouraging results (75 per cent. improved). He also confirmed to a certain extent Marmorek's animal experiments, but thought the serum too weak to produce absolute immunity. Most of the published reports refer to only small groups of three or four cases, and as thus of little value statistically, though they seem to indicate the usefulness of the treatment.[6]

[1] Hallopeau, *Ibid.* [2] Monod, *Ibid.* [3] Stephani, *Lancet*, 1905, ii. 1281.
[4] Habershon, *Ibid.* [5] Levin, *Ibid.*, p. 1282.
[6] *Vide* Bassano, *Ibid.*, p. 760; *also* Latham, *Pulmonary Consumption*, 2nd Edition, 1905.

Speaking generally, it would seem that serum-therapy should be useful in cases when there is little response to active immunisation to toxins, that its danger lies mainly in over-dosage, whereby an excess of anti-toxin (amboceptors or copula) is acquired, and that the principal causes of failure are: (1) The small amount of circulating toxin in tuberculous disease; (2) the rapid elimination of anti-toxins; (3) the low anti-toxic valency of the serum of injected animals.

Perhaps, in conclusion, I may say a few words on the subject of Behring's recent announcement, because his method, though only known to us at present in outline, may in the near future become an important factor in all discussions on immunisation against tuberculosis. As far as I am able to understand it the method is this: Behring first separates certain toxic and useless principles from the bacilli, leaving residual forms which he subsequently reduces to an amorphous powder. This powder is, or contains, a substance called TC. It is not an anti-toxin, but the precursor of a substance TX formed by it in combination with lymphoid cells in the body. The formation of TX coincides with the production of eosinophil cells and the condition of immunity. Behring's process is thus not an active immunisation, because he does not inject a toxin in order to stimulate the production of anti-toxins. It is in a sense a passive immunisation, because he injects the substance which produces the reaction to Koch's tuberculin, and which the organism in any natural attempt to acquire immunity has to make for itself. But it differs from former methods of passive immunisation in that no directly anti-toxic animal serum is used. The main difficulty which an infected animal has is to get this TC from the bacilli. If he can get enough TC, this combines with the lymphoid cells to produce TX, and the animal becomes immune. Behring's process supplies unlimited quantities of TC ready made, and it is apparently to be used more or less as a prophylactic. TC can produce tubercles which neither caseate nor soften, which must thus be regarded as part of the natural protective reaction against the bacterial invasion.

THE PROGNOSIS OF PULMONARY TUBERCULOSIS.[1]

BY

J. J. S. LUCAS, M.D., B.A. Lond.

THE subject I have chosen for this short paper is one which has been so much discussed by those more capable of forming opinions than I am, that you may consider it presumption on my part to do more than formulate their opinions, or at most to draw deductions from compilation of statistical results. I however do not intend to do this, but as I have possibly seen more pulmonary tuberculosis than any other serious disease, I am venturing to give you a few of the impressions I have formed and some of the various points I take into consideration in prognosing the future of a phthisical patient. Some of these have undoubtedly been impressed upon my mind by previous reading and confirmed by experience, while others may be erroneous and due to forming conclusions from peculiar groups of cases chance occasionally throws in one's way.

In the first place I will say that I have formed the opinion that it is unwise for a patient who has definitely had pulmonary tuberculosis to ever consider himself a sound man. Once a consumptive, always a consumptive. It is, I think, a very rare thing for a patient who has physical signs of lung tuberculosis and the presence of tubercle bacilli in his sputum to get well and remain perfectly well for many years while attending to his former occupation. A patient under sanatorium treatment may lose all his symptoms and the disease may remain quiescent for a long period, but sooner or later, more especially if he tends to drift into former habits, a relapse occurs which eventually may prove fatal. Within the last few months I have had five patients of this kind. All of them have broken down after having had no active physical signs nor

[1] Read at a meeting of the Society on February 14th, 1906.

symptoms, not even a cough, for more than a year—one for nearly four years. Three of these have got practically well again, one is improving to some extent, while the fifth is rapidly getting worse. I know, of course, that a large percentage of hospital *post-mortems* show healed evidence of tuberculous mischief at an apex, but nearly all of these were not diagnosed, and a large number would have been undiagnosable, due allowance being given for the shrinkage during the contraction in healing. It is certainly rare to find evidence of healed mischief beyond this such as would have been easily diagnosed, as for instance that which would have given infra-clavicular signs.

Having made a diagnosis, one of the most important points in influencing the prognosis is, I think, the appearance of the patient and the configuration of the chest. Anyone by inhaling a sufficiently large dose of bacilli may generate the disease, and I suppose the major portion of sanatorium patients are not of a typical phthisical appearance.

Persons however of the old tubercular and scrofulous types —especially the former, those with a lively temperament and long, narrow chests—unless they are most carefully looked after do somehow or other develop consumption. In these the prognosis is certainly very bad. There seems, as a rule, no way of stopping the disease, and life is prolonged at the most only for a year or so. In these cases the constitution is generally hereditary, and if I examined a patient of this type and found only slight but definite indications of active tubercular mischief I should tell his friends that in spite of treatment the patient would probably gradually lose ground and would never be fit again to resume his previous duties.

On the other hand, in a patient with a well-developed chest and prominent infra-clavicular regions, who had a good family history and who possibly had developed a tubercular patch on one of his lungs after extra hard or unhealthy work, I should be inclined, if there were no signs of great activity, to give the best of prognoses, viz. that with suitable treatment he would lose most, if not all, of his symptoms, and with care would probably live many years, and during that time would be capable of doing a good deal of useful work.

Of early symptoms two of the most suggestive of the further course of the disease are hæmoptysis and dyspepsia. In my experience hemorrhage in the early stages generally indicates a chronic form. Very often, of course, no physical signs indicating phthisis can be found at first, but when they do assert themselves they seem to be of the fibroid type, and the disease tends to run a prolonged course with intervals of good health.

Dyspepsia, on the other hand, is a bad sign. Hygienic treatment may in some cases successfully combat this, but many of the cases cannot be checked, and persistent early indigestion, especially if attended by vomiting, is often the precursor of a progressive fatal illness.

A high temperature at one examination I do not consider of much importance as a rule. The exception is possibly a high temperature—say 104°—in a patient who does not appreciate the fact, and who only feels to be a "bit off colour." This is somewhat akin to the worst forms of typhoid and pneumonia. I have two recent cases in mind which may serve as examples. A doctor's daughter was going away from home to a boarding school, and was dressed ready to go when I chanced to look in. Her mother asked me to see her before she went, as she was not feeling very well. I found her temperature to be 104°, and her sputum on examination showed tubercle bacilli. She only lived six months. Another young fellow came to consult me for general malaise. He had a temperature over 103°, but no physical signs in his lungs. Bacilli were found in his sputum. A trained nurse he was living with at the time pooh-poohed the idea of phthisis, and suggested his doctor was wrong. In spite of treatment, however, he has steadily lost health since, physical signs in both lungs have developed, and he is now in a precarious condition.

The value of a regular temperature chart in treatment is too well known to need comment, and when under treatment an evening temperature two or more degrees above normal persists for a month the outlook is bad. I have certainly seen exceptions to this, but they are rare and may perhaps be said to prove the rule.

From the point of view of prognosis, the pulse to my mind is of more importance than the temperature. The first case of phthisis I saw in private practice was that of a young man with a pulse of 80 and a temperature over 100°. That was five years ago, and he is still alive and at work, and although he occasionally has remissions he is well enough to contemplate marriage (against my advice).

On the other hand, cases I have seen with a pulse more rapid than could be accounted for by the temperature have almost invariably rapidly lost ground.

Of the commoner complications I should like to refer to the influence of laryngeal tuberculosis on the prognosis. From cases I have seen I should divide these cases into at least three varieties: (1) Ulceration of the cords alone, (2) swelling and ulceration of parts above the cord especially affecting the mucous membrane between the arytenoids, the ary-epiglottidean folds, and more rarely the epiglottis, and (3) general ulceration in the late stages of phthisis in which the trachea is often extensively involved with the other portions.

Ulceration of the cord alone does not appear to influence the prognosis. It sometimes occurs at the earliest stages, and I have certainly seen some cases get well.

Perhaps the commonest variety is swelling and ulceration in the outer arytenoid region. This is apt to spread and cause a good deal of huskiness in the voice, a certain amount of pain from involvement of the cartilages, and often dysphagia.

Nothing, as far as I know, can do much good for these, and the interesting point is that the lung physical signs are often masked. In Mr. Lake's book on *Laryngeal Phthisis*, on the front page, is a drawing of a specimen I mounted of extensive laryngeal and tracheal ulceration. I remember perfectly well that a few days before this man died we could only find slight traces of disease in the lungs, but at the *post-mortem* examination both were riddled with cavities. I have a similar case at the present time of a man dying with phthisis with a throat of this kind. Over six months ago his sputum was swarming with bacilli, and since then two doctors have told him his chest was intact. He is developing a few

physical signs now, but I feel certain there is much more mischief than these indicate. Why this is so is probably due to small inlet of air into the lungs, and with a throat of this kind I generally conclude that the lungs are much worse than examination of them indicates, and that the prognosis is bad.

Before ending these disjointed remarks I should like to briefly consider how the effect of treatment should influence the prognosis.

If after a few weeks' treatment there seems to be no improvement, but rather deterioration, a change of sanatorium is indicated; and if the result is similar, then after two or three different localities have been tried, it is perhaps better to allow the patient to please himself how he ekes out the last little bit of his wretched existence.

The majority however, I suppose, improve for a time under hygienic treatment anywhere. In some this improvement is only transient, and a maximum is reached in a few weeks, with a steady decline in health afterwards. These patients are very unsatisfactory, and usually in them the prognosis is almost as bad as in those who do not improve at all. Another very annoying group of cases are those who are sent out of sanatoria "*cured*" or "much *improved*," who begin to lose ground directly they come home and resume their necessary duties, although generally under more improved conditions than before. This unfortunately includes a large portion of patients, and I have repeatedly had cases under my charge who have been sent home from sanatoria as well who succumbed in a few months to the disease. The only real test of satisfactory improvement is for patients to be able to live at their homes and to earn a livelihood for months without breaking down.

These, gentlemen, are a few of the points I consider in foretelling the future of a consumptive. They are I know far from complete, and purposely so. I have simply given a few ideas first hand, and have intentionally omitted the influence of concurrent diseases, and the effect on the prognosis of the amount of the tuberculous mischief and its position in the lungs, This is beyond the scope of the paper. The disease is a very

deceptive one. Many accidents may happen, and it is unwise to be too definite. To make my remarks quite clear, I will end by enumerating the various points mentioned:—

(1) A phthisical patient should never consider himself sound, at least not for some years, even after loss of all symptoms.

(2) The appearance of the patient, the shape of his chest, and his family history are of the greatest importance in prognosis.

(3) Of early symptoms hæmoptysis by itself is rather a good sign, while dyspepsia is a bad one.

(4) Fever at one examination as a rule does not help the prognosis, but persistent evening temperature for a month is bad.

(5) A rapid pulse is one of the worst of omens.

(6) Of throat complications, ulceration of the cords alone does not indicate much; swelling in the larynx is much more serious, and the physical signs in the lungs are often deceptive in these cases.

(7) The effect of treatment can be gauged only by the condition of the patient several months after he has left the sanatorium, and has undertaken duties he intends to perform for the rest of his life.

WHY DEFECTIVE NASAL RESPIRATION IMPEDES GROWTH AND DEVELOPMENT.

BY

P. WATSON WILLIAMS, M.D. Lond.,

Lecturer on Diseases of the Nose and Throat, University College, Bristol; Physician in charge of the Throat Department, Bristol Royal Infirmary.

DEFECTIVE nasal respiration is not synonymous with nasal stenosis, and many mouth-breathers have no obstruction in the nasal passages sufficient to prevent them breathing through the nose. Why and how imperfect nasal respiration becomes a

source of ill-health and of defective development is worthy of consideration, if only as a guide to treatment for remedying the habit, which often persists after actual obstruction has been removed, and may exist without any obstruction sufficient to necessitate operative measures.

The evil effects of mouth-breathing are due (1) to the inspired air not being filtered, warmed and saturated with moisture before reaching the lower air passages; (2) the constant effort to inspire through a partly blocked nose; (3) the absence of the stimulation to respiration that normal nasal respiration affords.

It has been calculated that at least 1,500 organisms are inhaled into the nose every hour, while it must be a common event, according to St. Clair Thomson and Hewlett, for 14,000 to pass into the nose in a single hour in an average London atmosphere. Nevertheless, the expired air is practically germ free, nearly all the organisms in the inspired air being arrested in the nasal passages. There must be a considerable number of pathogenic organisms amongst those inhaled in any city atmosphere, hence we find that in any diphtheritic epidemic a large number of healthy children may yield diphtheria organisms on cultures being taken from the nose; and if, as has sometimes been done, these are considered to be infected with diphtheria on cultural evidence alone, quite uncalled-for alarm may arise and a number of healthy individuals be unnecessarily certified as suffering from diphtheria. So too with other organisms, such as the meningococcus, and could we as readily identify the organisms of scarlatina, and other common infectious diseases, we should doubtless find them in the noses of healthy individuals.

Then, again, it has been repeatedly demonstrated that the secretory functions of the nose vary in activity with the needs of the moment, and no matter how dry the atmosphere may be, the inspired air becomes completely or almost completely saturated with moisture as it passes through the nasal passages, and is at the same time raised in temperature to normal blood heat. It has been estimated that about half a pint of water is taken up by the inspired air in the course of twenty-four

hours, and, if the air is to reach the lungs in a normal condition of saturation, it is impossible for that amount of moisture to be taken up from the mucous membrane of the throat without serious risk to its physiological integrity. Incidentally we may refer to the still too prevalent idea that dry air, such as that of the higher Alpine health resorts, exercises a beneficial effect on pulmonary diseases because it is dry. An obvious fallacy, inasmuch as even this dry air becomes saturated with moisture before it reaches the lung, and if from any defect in the nose this does not occur, the very dryness becomes a fruitful source of tracheal and bronchial trouble.

The pernicious effects of mouth-breathing in children are seen in the constant tendency to infective catarrhs, bronchial colds and pulmonary complaints from which children with adenoids and some other causes of nasal obstruction are so prone to suffer.

The mechanical or physical effects due to the effort of a child to breathe through partially stenosed nasal passages without doubt accounts for much of the secondary pathological consequences of nasal obstruction, especially the defective expansion of the lungs and deformity of the chest walls. Personally, I am convinced that the mechanical factor, though undoubtedly potent, has been exaggerated, and that other important physiological factors have been overlooked.

While not by any means the only source of defective nasal respiration in childhood, it may be conceded that by far the commonest cause is the presence of "adenoid growths"; yet in a large proportion of these patients the adenoid growths do not cause any actual mechanical obstruction in the nasal passages, and in all cases I am convinced that it is rather the indirect results of adenoids which are mainly responsible for the abnormal respiration. Hence we find that the pernicious effect of relatively small amounts of adenoid growth may be as marked or even more pronounced than in some patients with large adenoid growth. It was formerly believed that enlarged tonsils caused pigeon-breast by mechanical impediment to free inspiration, but when we remember how much smaller is the glottic chink in a child than is the available air space between almost

any case of chronically enlarged tonsils, it is obvious that the narrower airway is within the normal larynx. Now, however, it is held that the co-existing adenoid growths are responsible for the chest deformities, and though in cases where these growths are large they offer mechanical obstruction to inspiration, in a large number of children, who suffer equally, there is no mechanical obstruction comparable to the narrow normal glottic chink. These minor degrees of adenoids, as do all adenoid growths, maintain a more or less persistent or frequently recurring nasal catarrh, which is really the most potent cause of defective respiration, just as catarrh of the Eustachian tube, and not mechanical occlusion of the Eustachian orifices by the growths themselves, causes the deafness which is so constantly associated with adenoid growths. Thus we may find an explanation of those cases of partial but purely mechanical obstruction to nasal respiration, *e.g.* by anterior deflections of the septum, or the rarer partial occlusion of the nasal passages at the inner extremity of the vestibule, in which, unless adenoids co-exist, the chest deformities may be absent, despite the equally marked defective patency of the nasal passages. In a sense, every child has some adenoid growth in the naso-pharynx, for a considerable aggregation of healthy lymphoid tissue is the birthright of every child, as is a pair of healthy faucial tonsils; the removal of this healthy naso-pharyngeal tonsil is not a proof that the child had adenoids.

Thus it is the secondary or indirect results of unhealthy lymphoid tissue in the naso-pharynx, the consequent persistent nasal catarrh which the adenoids keep up, which is very largely responsible for the defective nasal respiration, and it is the absence of normal nasal respiration which causes the pulmonary troubles and defective development of the chest wall so generally present. Other conditions such as marked septal deflection, hypertrophy of the turbinated bodies, accessory sinus disease, polypi and disease of the ethmoidal labyrinth, congenital occlusion of the nasal passages anteriorly or at the posterior choanæ, if sufficient to markedly impede nasal respiration, are effective, though less potent factors impeding growth and development in children. Why?

Under normal conditions breathing is an involuntary act, for though it may be temporarily arrested or accelerated by an effort of the will, it is habitually maintained and regulated according to the degree of venosity of the blood by the respiratory centre in the medulla, and the activity of external respiration—*breathing*—depends on and corresponds with the activity of internal respiration—*tissue metabolism*—thus if a child runs he breathes more rapidly.

But although the respiratory centre is largely automatic, its activity is influenced by afferent impulses, and therefore is to a certain extent a reflex centre. Thus there is ample evidence that the normal activities of the respiratory centre depend on impulses reaching it from the lung through the vagi, from the surface of the skin, and lastly, but not least, from the nasal and naso-pharyngeal passages through the fifth and glosso-pharyngeal nerves.

That stimulation of the upper part of the nasal passages influences respiration has been demonstrated experimentally by Spencer, who likewise obtained slowing and acceleration of the respiration rate from stimulation of the olfactory limb of the anterior commissure and of the area around the upper end of the infra-orbital sulcus respectively, while common experience tells us that irritation of the nasal passages by smelling salts influences respiration, and intense subjective sense of dyspnœa following the insertion of the finger in the naso-pharynx, a method still used for the diagnosis of adenoids, is due to the same respiratory inhibitory impulse that sometimes causes a dangerous arrest of respiration during the operation for the removal of adenoids under anæsthesia. Thus we find in the absence of normal nasal respiratory stimuli, with the existence of adenoids in the naso-pharynx, a cause for the deficient activity of the respiratory centres in young growing children, which results in infra-clavicular flattening of the chest wall.

I should be sorry to under-estimate other factors which must be held accountable for the defective physiological activity of the respiratory centres in children suffering from enlarged tonsils and adenoids, chief among which is a chronic sapræmia, causing tissue inactivity and hence absence of the normal need

for more rapid respiratory exchanges, but I am anxious to emphasise the physiological import of the nose in influencing respiratory activity, and the pernicious effect of the absence of nasal respiration, not alone from the commonly recognised results of unwarmed and unmoistened air reaching the lungs, but from the persistent abrogation of nasal respiratory stimulation. The benefit which is anticipated from the removal of adenoids may fail to be realised either because the real cause of nasal obstruction has been overlooked or only partly removed, or because the habit of breathing through the nose has persisted so long that, without suitable respiratory exercises and general hygienic treatment, the normal factors are not brought into play. It is scarcely an exaggeration to say that children who persistently fail to duly expand their lungs, in other words, whose respiratory exchanges are subnormal, are underfed, for a due supply of inspired oxygen is essential for the utilisation of food in the processes of "internal respiration."

Disappointing results may follow operative treatment in nasal obstruction, firstly, because the real cause of the obstruction has been overlooked, (generally because intra-nasal obstruction has been wrongly diagnosed as adenoids); or, in the second place, because the original cause of defective nasal respiration having been removed, the necessary measures for re-establishing long-lost normal respiration are not applied.

Physiological conditions do not always persist in their entirety despite abnormal states, and thus it is that pathological conditions in the nose, apart altogether from the mechanical obstruction which may or may not exist in any material degree, become associated with diminished demand for, and hence diminished respiratory exchange. "Forced" feeding will increase nutrition, provided, of course, assimilation can be assured, and so, too, respiratory exercises properly applied improve deficient respiration and increase the physiological demand for a fuller respiratory exchange; and if anyone doubts the possibility of increasing a healthy "air-hunger" as well as inducing a normal gastric appetite, let him meet some healthy patients fresh from a sanatorium for consumption.

After the removal of any abnormal conditions in the nose

and throat, one should advocate open-air methods, cold bathing, and particularly physiological drill comprising appropriate respiratory exercises, in order that these listless, partially asphyxiated children should grow up in the fulness of life.

SOME EFFECTS OF FRIGHT IN MEDICINE.[1]

BY

J. R. CHARLES, M.A., M.D. Camb., M.R.C.P.,

Assistant-Physician to the Bristol Royal Infirmary.

THE emotions play a part in medicine which perhaps we are sometimes inclined to overlook, and among these emotions fright occupies a prominent place. Fright is defined as the particular emotive reaction which takes place through a sufficiently vivid and persistent representation of possible pain or evil (Sully). It has been observed as early as the twenty-first day of life, and may be innate, *i.e.* it may occur in the offspring, not only as the result of past experience of the individual, but also of the experience of its ancestors, as witness in this respect the fear of young animals for birds of prey. If fear and alarm become more intense they pass into the condition called fright, and if the intensity of the emotion becomes still greater the state of terror is produced. The results of a large amount of work which has been done on the physiology of fright may be briefly summarised thus:—

The attitude varies, and may be couching or erect; sometimes there is flight. The eyes and mouth are generally widely opened, the eyebrows raised. As regards the vaso-motor apparatus, there is widespread vaso-motor constriction of the cutaneous area with a feeling of chilliness, shivering, and "goose-skin." At the same time there is probably a corresponding vaso-dilatation of some of the internal vessels, as evidenced by the copious secretion of urine, the so-called nervous urine in which the water is increased out of all proportion to the solid

[1] Read at a meeting of the Society on January 10th, 1906.

constituents, and also by diarrhœa. As a rule the heart beats quickly and violently, but if the impression is very sudden and intense there may be complete arrest of the heart's action. There is frequently a spasm of some of the involuntary muscles leading to involuntary micturition and less frequently defæcation, and a feeling of oppression and constriction in the chest, probably due to contraction of the bronchial muscles. The eyelids are widely opened, the globes protrude, and the pupils are wide. Respiration is hurried. Of the secretions we find some diminished, such as the lacteal and salivary, so that the mouth becomes dry, while others may be increased, viz. those of the kidney, intestine, and sweat-glands. Owing to the coincident vaso-motor constriction, the perspiration forms a cold, clammy sweat. The hairs have sometimes been observed to become erect. Menstruation may be suppressed.

Fright may completely paralyse the voluntary muscles so that a man may be rooted to the spot through fear, or acting in a less intense degree may cause a certain amount of paresis with tremor, or acting with still less intensity may produce tremor only. This last condition is so common that the verb "to tremble" has become almost synonymous with the verb "to fear." It is probable that these variations depend on the amount of inhibition of the rate of the nervous discharge of the cells of the upper neurons. Very much more rarely the muscles may become rigid, or be thrown into convulsive movements during moments of great terror. The tremor manifests itself not only in the muscles of the trunk and limbs, but also in those of the larynx, producing the broken tremulous voice, or if the condition be more marked absolute dumbness.

It will be noticed that there are certain points of analogy between the bodily effects of fright and those of cold, viz. the cold surface from vaso-motor constriction, the goose-skin, erection of hair, polyuria, tendency to diarrhœa and tremor, although in the case of cold this shaking is probably due to a protective action on the part of the body whereby increased heat may be obtained by muscular contraction, while in the case of fright it is probably due to an inhibition in the rate of nervous discharge from the higher motor centres.

Fright, then, seems to have a paralytic effect on many of the muscles of volition, a stimulating effect on many of the unstriped muscles supplied by sympathetic nerves in addition to, or possibly secondary to, its depressing effect on the mental processes. It seems as if fright occupies much the same position in medicine as an exciting factor in the causation of pathological manifestations and also in accentuating their signs and symptoms, as does cold. The former, however, acts on the body through the mind, the latter produces its effect directly from outside, without the intervention of mental processes. Attention is given to the avoidance of cold and chills, perhaps not sufficient to that of the evil effects of undue emotional activity.

As is well recognised, some people are much more susceptible to the effects of chill and cold than others, and we find the same thing holding good in the case of fright. In the first place there is the group of people who inherit an unstable nervous system who are unduly influenced by slight alarm, and we find this state of mind particularly marked in those who are descended from epileptic, choreic and hysterical ancestors. Then again, many people who being originally endowed with stable enough nervous systems, on becoming neurasthenics from mental or physical causes, are very susceptible to the effects of fright.

With the effects of fright as a causative factor in the production of insanity I do not propose to enter, as this is a subject rather for the alienist than for the physician. The common expression of being "frightened out of one's wits" shows that at any rate this causative factor is recognised by the lay mind.

Turning, however, to its more immediate effects in general medicine, I will begin first with children. Of nocturnal eneuresis there are many causes, but I have seen a child who was never in the habit of wetting his bed do so for several nights in succession after having been unduly alarmed, and I am inclined to think that this habit may be initiated more frequently than is supposed by some fright during the day and subsequent dreams at night associated with micturition

from fear. Fear and fright are, of course, much more potent for evil when acting on the immature and developing brain of the infant than on the brain of the adult, for the power of imagination is so much more lively in early life and the relative ignorance of the meaning of its surroundings may suggest to a frightened child's mind all sorts of alarming interpretations. Of these he dreams at night, and thus may become the subject of well-marked *night terrors* of the so-called idiopathic variety. Such children are frequently descended from neurotic ancestors, and when awake are easily startled and alarmed. They are liable to infantile convulsions, and may become in later life epileptic, hysterical, neurasthenic or even insane. The importance of the avoidance of all forms of fright in childhood cannot, I think, be over-estimated.

Repeated fright or fear is extremely depressing to the organism, and hence tends to diminish the resistance of the body to *microbic invasion*. We can probably all remember instances of patients who ought not to have died as far as one could judge from the severity of their lesions. This depressing effect has also been observed during epidemics, and Osler says that fear of the disease has a marked influence in inducing an attack of cholera during an epidemic.

We have seen that fright acts through the nervous system, and hence it is not surprising that it plays a not unimportant rôle in *nervous diseases*.

It is well known that some diseases have many forms of abnormal fears, such as agoraphobia, claustrophobia, and many other phobias, among their symptoms, but I am not concerned with fear as a symptom of disease, but rather with the etiological or influencing factor of fright. If we consider the marked nervous manifestations induced by fright in a healthy man, it is not surprising that we find fright as an etiological factor in diseases where these symptoms are present. Take, for instance, *chorea*. I find in all the books I have looked up that fright is given as an etiological factor. Gowers says that the only immediate cause of chorea which can be traced with any frequency is emotion, generally fright. The interval between the fright and the first symptoms rarely exceeds a

week, while very occasionally the chorea follows immediately after the fright, as in the case of a boy in whom the movements commenced immediately after a pistol had been unexpectedly discharged close to his ear. Risien Russell says that there are well-authenticated cases in which the disease followed so immediately on the emotion as to leave no reasonable room for doubting the relationship of cause and effect. We know the close relationship of chorea and rheumatism. We know from a practical point of view that although there is an organism behind the scenes, cold and wet are important factors in the causation of rheumatic fever. Cannot we say the same in connection with the relation of fright to chorea? The organism is there. Fright is the exciting cause, which by its own profound effect on the motor elements of the nervous system allows the toxin to act in its own peculiar way on the depressed tissues, and hence the brunt of the disease falls in this case on the nervous system instead of on the joints. Obviously then in a person with a rheumatic tendency the exciting cause, fright, should be as much guarded against to prevent chorea as wet to prevent rheumatic fever.

The next disease to which I shall briefly refer is one the true pathology of which is still obscure, viz. *Paralysis agitans*. This disease may be regarded from some points of view as a double hemiplegia, and exhibiting, as we might expect under such circumstances, paresis, increased muscle tone, and disordered movement, two symptoms of which we have seen are commonly produced by fright. Curiously enough this disease may also be apparently caused by fright. Gowers gives two remarkable examples: "A man was waked by a bell on account of a fire. For a year and a half the same bell always caused transient tremor, which then became permanent, and passed into the typical form of paralysis agitans. The direction of alarm may localise the commencement of the affection. A remarkable example of this was presented by a woman, aged 37, who was sitting quietly at work when a stream of water suddenly flowed from a tap on her left wrist. She was much startled; the left arm immediately began to

shake, and the tremor persisted, passing to the leg and afterwards to the limbs of the opposite side." When she was seen a year later she presented all the characters of the disease in its typical form. Terror or fright often acts as the proximate cause of the manifestations of *hysteria*, and the symptoms may follow immediately.

In June, 1900, I saw a man who had been much startled by a heavy thunderclap. He sat down and shook all over. The general shaking soon ceased, but marked, coarse, regular jerking movements immediately began in the right hand, forearm, and slightly in arm. He had not lost power in his legs or in the left arm, but complained of weakness in the right arm with a sensation of pins and needles in the back of his hand. By an effort of will he could slightly restrain the movements in his right hand, the rate of which were 160 per minute. The movements occasionally almost ceased when his attention was withdrawn suddenly. Tapping the wrist on the right side doubled the rapidity of the tremor, and over the right hand and forearm there was marked analgesia and anæsthesia. His knee-jerks were brisk. No other sign of nerve lesion could be detected. The case made an impression on my mind because I saw a very similar case the same afternoon resulting from the same thunderstorm in a woman.

Another disease associated with tremor in which the deleterious effect of fright is of great importance is *Graves's disease*. As Mackenzie says, "it is interesting to note the close connection between the acute or chronic symptoms of exophthalmic goitre and the more immediate effects of terror. The heart beats quickly and violently; there is trembling of all the muscles of the body; the eyes start forward, and the uncovered and protruding eyeballs are fixed on the object of terror; the face and neck are flushed or pallid, and the intestines are affected." That occasionally Graves's disease in a well-marked form rapidly follows a sudden shock to the nervous system indicates that all the symptoms may be produced in such a way. It appears as if fright acts here either as a stimulant to certain parts of the sympathetic system, or by inhibiting some centre which normally controls

impulses passing continuously along the sympathetic. The dilator pupillæ, the non-striped part of the levator palpebral superioris, the orbital muscle of Müller, which are all innervated by branches of the cervical sympathetic, contract under the influence of cocaine, producing dilatation of the pupil, some retraction of the upper lid, and some proptosis. If from any cause there is previous irritation of the sympathetic, these signs may become very well marked under the influence of cocaine. It is interesting to note that these are the same signs which are met with under the influence of fright and also in Graves's disease.

I have mentioned previously the *analogy between cold and fright.* No single actual excitant of neuralgia is so frequent as exposure to cold, which is a powerful vaso-constrictor of the cutaneous vessels. Fright is also associated with similar vaso-motor constrictions, and it may also initiate recurrent neuralgia. Gowers refers to a case in which violent paroxysmal neuralgia of the face, which recurred for five years, was undoubtedly due to a fright brought on by the unexpected discharge of a gun. He infers that the fifth nerve may have been picked out in this case, as the fifth nerve is especially related to emotion.

The so-called paroxysmal neuroses are much influenced by fright. *Idiopathic epilepsy* frequently owns fright as its immediate exciting cause. Usually a short interval elapses between the alarm and the first fit, but not always. I have at the present time a patient under my care whose first fit occurred the same night on which she was much frightened, when walking in the dark, by a man jumping out of the hedge. Curiously enough she has also a peculiar champing movement of her mouth, suggestive of the mouth movements described by Darwin as occurring during terror. In some cases in which fright has been the exciting cause of the first attack, the original scene, or sense of terror has persisted as an aura in subsequent fits. The relation of fright to *asthma* is peculiar, because while on the one hand it may be the exciting cause of an attack, on the other hand it may act as a curative agent. That it should act as an exciting cause is not surprising, when one remembers the oppression in the chest which may be induced by fright, and

which is supposed to be due to spasm of the bronchial muscles. Hyde Salter quotes the case of a man who had never suffered from any lung affection, and who at a time when he was in perfect health was suddenly seized with difficulty in breathing, which proved to be true spasmodic asthma following great alarm from thinking that he had administered poison by mistake. An interesting point about the cure of asthma by fright is that it may be instantaneous, as in cases where great alarm has been caused by fires.

According to Liveing fright may excite the onset of *megrim*. It may, moreover, check the disease. He quotes the case of a lady who suffered from violent attacks of megrim which recurred every eight or ten days. One day, when feeling an attack coming on, she went to look at her face in a glass, and her cap caught fire, burning her forehead. The expected seizure never came, and furthermore she had no return for some years.

But the baneful effect of fright is by no means limited to diseases of this type. Dr. Lucas told me recently of a patient of his suffering from phthisis, who was however progressing as favourably as could be expected. She was upstairs, when she became much alarmed by hearing a strange man enter the house. The man happened to be a clergyman who had come to inquire about her. But as the result of her fright a copious hæmoptysis ensued, and since that time she has progressed so unfavourably that her life is despaired of. Many other interesting cases are on record, such as the case mentioned by Clifford Allbutt of chlorosis following extreme terror, who adds that other similar cases have been met with, and one quoted by Murchison of a priest who after a sudden fright from the rush of a mad dog uttered a loud cry, fell down unconscious, and was taken up yellow as saffron from jaundice. Probably in this case spasm of the bile-duct was the mechanism by which the jaundice was produced.

Many other diseases might be discussed from this point of view, more particularly angina pectoris, Raynaud's disease, gout, heart disease, whooping-cough, tetanus, and hydrophobia.

COLITIS POLYPOSA.

BY

CAREY COOMBS, M.D., B.S. Lond.,

Curator of the Museum, Bristol General Hospital; Physician to Out-patients, Royal Hospital for Sick Children and Women, Bristol.

THE subject of this paper is a specimen in the museum of the Bristol General Hospital, which seems worthy of attention because it is an example of a condition hitherto only described once, I believe, by Dr. Pope, of Leicester.[1]

It was taken from a patient admitted to the General Hospital in October, 1900, under Dr. Harrison, who has kindly allowed me to make use of the clinical notes. I am also much indebted to Dr. Michell Clarke for further details and for permission to use his *post-mortem* notes. The patient was a servant girl, 29 years old, who in August, 1900, began to have a frequent desire to evacuate the bowels. Her motions became "matter-like" and loose, and often contained blood; she had indeed passed blood before this, but up till August had given little heed to it. There was some abdominal pain of an aching character, never very intense. She had never been abroad, and gave no history of previous illnesses or of anything which could in any way account for the onset of her present troubles. When admitted she was anæmic, feeble and wasted. There had been, on an average, four or five motions daily, and though at first it seemed as if under treatment she were improving, this was only temporary, and the diarrhœa continued without intermission till her death in January, 1901. Much mucus was passed, and often there was blood in the stools. The temperature fluctuated between 98° and 101° throughout her stay in hospital. Dr. Clarke tells me that during life the colon could be felt through the abdominal wall. Clinically, therefore, the case in most respects imitated the course of chronic dysentery.

[1] Pope, *Brit. M. J.*, 1904, ii. 180.

At the autopsy the body was wasted and remarkably free of fat. The small bowel was thin and atrophic, and the morbid process was limited to the large intestine, which was thick and firm, with a narrowed lumen. There was neither perforation, peritonitis, nor enlargement of lymphatic glands. The specimen about to be described consists of the cæcum, the ascending and part of the transverse-colon. When fresh it was pale red in colour. The wall of the bowel is seen to be thick; this thickening is mainly due to increase in depth of the structures internal to the muscular layers, though these also have undergone hypertrophy by reason of the excessive frequency of peristalsis. It is the inner aspect of the bowel that is especially abnormal. At the cæcal end of the specimen the usual appearance of the mucous membrane is entirely wanting, and instead there are to be seen a great number of small polypi thickly set all over the internal surface of the bowel, with practically no open space intervening between them. They vary in size from that of an ordinary pin's head to that of small shot, the larger ones being distinctly stalked. The further from the cæcum, speaking generally, the smaller are the polypi; they are, however, gathered together into round masses, the larger of which have an area equal to that of a threepenny-piece. These masses are separated from each other by linear fissures, which seem to be merely clefts between the protuberances of polypoid mucous membrane, though some of them may be partly the result of ulceration. Nowhere is there ulceration deep enough to excavate the submucous coat to any extent, but there are a few superficial ulcers eroding the summits of the polypi, especially at the colon end of the specimen.

Microscopically the striking feature of the section is the increase in thickness of the submucous coat, which is everywhere about half as thick again as in the normal colon. It is this increase in the submucosa which has resulted in the polypoid state of the mucosa; the overgrowth of the connective tissue beneath the mucous membrane has pushed it out into a series of closely-set, irregular papillary processes. The clefts between the polypi represent those parts where

the mucous membrane has not been pushed out, and do not seem to be due to cicatricial contraction of the submucosa. The submucosa is seen to be divided into two layers: the outer of these is of normal consistence, except for an unimportant degree of round-cell infiltration in the neighbourhood of blood-vessels; this is to be seen also in the muscular and even in the subserous layers. The part of this outer zone of submucosa which immediately borders on the inner zone is rather denser in texture than normal, owing to the presence of inflammatory fibrous and fibroblastic tissue. The inner and immediately subepithelial zone shows a much greater degree of morbid change, and it is evidently to this layer that the greater part of the submucous thickening must be ascribed. There is an intense round-cell infiltration of this region, most intense about the neighbourhood of the muscularis mucosæ (which is so disorganised as to be scarcely visible) and slightly less so in the finger-like outgrowths which constitute the polypi. The round cells are for the most part mononuclear, and probably arise from the proliferation of the fixed cells of the tissue, except in one or two places immediately beneath the epithelium, where the inflammatory tissue has broken down: at these spots the cells are many of them polymorphonuclears, so possibly these areas represent the result of secondary infection by the various inhabitants of the large bowel. A few small vessels, chiefly veins, are thrombosed, and there is proliferation of the endothelium in some of the capillaries and smaller arterioles.

With regard to the epithelium, it is considerably distorted by the swelling and overgrowth of connective tissue beneath it; it is pushed out into the lumen of the bowel to form polyps which are riddled with crypts, the result of the irregular outgrowth of the submucosa; these crypts, on section, have the appearance of spaces lined by columnar and cuboidal epithelium, some of the larger of which probably represent cystic dilatation of the crypts due to obstruction by cicatrising submucous tissue. The total epithelial surface is, of course, greatly increased, but only as a result of the overgrowth of submucosa. The epithelial cells themselves are for the most part well

formed; in some of the cystic spaces they are flattened, in some spots they have undergone mucoid degeneration, and in some of the recesses between the polypi the surface is denuded of cells.

The process, then, to sum up, is a chronic inflammatory hyperplasia of the submucous layer of the colon, with consequent deformity of the epithelial surface. Dr. Pope's patient was a girl of 21, who had abdominal pain, constipation alternating with diarrhœa, and dysenteric stools for six months before death. *Post-mortem*, the whole colon was found covered with small polypi, and the microscope showed that the predominant change was an inflammatory hyperplasia of the submucosa. The specimen has since been included in the museum of the Royal College of Surgeons, where Mr. Shattock, the curator, tells me it is unique. In all their essential features, the case I have described and Dr. Pope's case are similar; both were young women, both succumbed after about six months of what appeared to be chronic dysentery, that is to say, diarrhœa (in one case alternating with constipation) with passage of blood and much mucus. In both cases exhaustion steadily progressed till it reached a fatal degree. *Post-mortem*, there was in both a general polyposis of the mucous membrane of the colon due to chronic inflammatory overgrowth of the submucous coat, while ulceration was absent or unimportant in degree. In both the rectal end of the colon had suffered less than the cæcal end.

Like Dr. Pope, I have been unable to find any record of a similar state. It is noteworthy that several of the newer "jerry-built" text-books allude vaguely to polyposis of the mucous membrane of the colon as a result of chronic catarrh, while more reliable works are silent on this subject. In Wilks and Moxon's book,[1] it is true, the term "Colitis polyposa" is used, but here and also in St. Bartholomew's Hospital Museum[2] it is applied to quite a different condition, namely to an advanced stage of ulcerative colitis in which such parts of the mucous membrane as have been spared by the destructive

[1] Wilks and Moxon, *Pathological Anatomy*, 1889, p. 434.

[2] Specimens 1987a, b, and c. *Vide St. Barth. Hosp. Rep.*, 1889, xxv. 306.

process are polypoid in form. In this condition, doubtless, the surviving masses of mucous membrane owe part of their bulk to chronic inflammation; the picture, however, of such a colon is that of ulceration with accidental polyposis, not of polyposis with unimportant ulceration. In Ziegler's book [1] is an excellent figure representing this; while a picture in Hemmeter's work, labelled "Colitis polyposa," seems to portray the same thing.[2] It is unfortunate that the same name should have been given to two quite distinct morbid processes; the condition exemplified by my specimen seems, however, to be more deserving of an individual name than a particular phase of ulcerative colitis; and the term "polypus" applies more aptly to that which is heaped up by a productive inflammation than to that which is the survivor of a destructive process.

There appears to be no very close alliance between this condition and the multiple adenomatous polypi sometimes found in the colon and also in the small bowel; the adenomatous polyps are larger and less crowded, while the specimen described here is undoubtedly representative of a chronic inflammatory process, though it is conceivable that the formation of adenomata might be preceded by an inflammatory stage. More closely similar are those results of chronic inflammation of the gastric wall known respectively as "état mamelloné" and "cirrhosis of the stomach." In the former there is a general polyposis of the mucosa, while in the latter, though there is glandular atrophy, there is great hyperplasia with fibrosis of the submucous coat. Bristowe says [3] that a similar cirrhosis may occur in the intestine, but makes no further allusion to it. Ruffini, of Bologna,[4] published a case of somewhat similar nature under the name of "diffuse hyperplastic colitis"; the patient was a woman of 38, who for a year or two before death (which occurred shortly after childbirth) had suffered from bouts of diarrhœa with abdominal pains, wasting, anæmia, and œdema of the lower limbs. *Post-mortem*, the wall of the colon

[1] Ziegler, *Special Pathological Anatomy* (trans. by MacAlister and Cattell), Sect. ix.–xv., 1897, p. 660.

[2] Hemmeter, *Diseases of the Intestines*, vol. i., 1901, p. 713.

[3] Bristowe, *Text-book of Medicine*, 7th ed., 1890, p. 703.

[4] Ruffini, *Bull. d. Sc. med. di Bologna*, 1892, iii. 147.

was very thick owing to cellular infiltration of the submucous coat, especially marked just beneath the epithelium; the vessels of the submucous coat were thrombosed, which Ruffini supposed to be the primary stage in the process. Dr. Pope thought his patient's condition was in some way due to a purulent vulvo-vaginitis from which she suffered, but in the case recorded here there was absolutely nothing to which the inception of the disease could be ascribed. Perhaps it merely represents the final phase of what we are accustomed to call a simple catarrh of the bowel, though as this is common and colitis polyposa would appear to be an unusual matter, it is not likely that simple catarrh alone was responsible. It may be, on the other hand, the achievement of some specific irritant, perhaps a simple body such as mercury or arsenic, or even some parasite which only occasionally makes man its host. Whatever the cause, the condition itself is worthy enough of note, especially when in the only two recorded instances there is so close a clinical as well as pathological similarity.

In conclusion, I must express my thanks to Mr. F. F. Leighton for his excellent microscopical sections, and to Mr. G. R. Rew for a low-power photo-micrograph.

Description of Plate.

The left-hand portion is the cæcum and beginning of the ascending colon, in which the polypi are seen to be larger and arranged singly. The right-hand portion is a part of the transverse colon; here may be seen rounded masses of smaller polypi, separated by linear fissures. The cut surface in the left upper part of the right-hand specimen shows the thickening of the intestinal wall, and especially of the submucous layer.

Hypertrophied muscular layers.
Zone of submucosa which shows a certain amount of fibrosis.
Zone of active inflammatory proliferation of submucous connective tissue.
"Polypi" = irregular outgrowths of mucous membrane pushed out by proliferation of submucosa. Two are seen, separated by a shallow cleft.

"COLITIS POLYPOSA"—*Low-power micro-photograph.*

NOTES OF A CASE OF ACUTE YELLOW ATROPHY OF THE LIVER.[1]

BY

F. H. EDGEWORTH, M.B. Cantab., D.Sc. Lond.,

Professor of Medicine, University College, Bristol;
Physician to the Bristol Royal Infirmary.

ACUTE yellow atrophy of the liver is such a rare disease that individual cases are worthy of publication. The following is the only instance which has occurred at the Royal Infirmary in the last eighteen years.

A woman, aged 40, attended the out-patient department on July 8th last, complaining of nausea, anorexia, and occasional vomiting for the preceding week. She had never had any serious illness, and had never been jaundiced before. She had drunk a fair quantity of beer. She was found to be slightly jaundiced, with a normal temperature, a good pulse of 90 per minute, no arterio-sclerotic changes, normal heart and lungs. The vertical extent of hepatic dulness was normal, reaching to the costal margin in the right nipple line. Nothing wrong was detected on palpation of the abdomen—no tumour or distended gall-bladder, or enlarged spleen. A diagnosis of catarrhal jaundice was made. Salicylates and saline purgatives were ordered.

On July 14th, one week later, she again attended. The nausea and anorexia were better, but the jaundice still persisted. The urine contained bile pigments but no albumen.

On July 20th she felt sick again, had pain in the abdomen, and vomited repeatedly; on the following morning she gradually became comatose, and was admitted to the Infirmary about 11 a.m. I saw her at 12 o'clock. She was in a semi-comatose state, with clenched teeth, equal pupils slightly reacting to light, and moving a little when the skin was sharply pinched.

[1] Read at a meeting of the Society on January 10th, 1906.

The skin, of a faint orange colour, was sweating profusely, and the temperature was 99° F. The pulse was regular, of low tension, 134 per minute. The apex of the heart was ½ in. internal to the left nipple line, and no added sounds were present. The lungs were clear down to the bases. The abdomen was flaccid, no enlarged subcutaneous veins were visible. No ascites, or tumour, or other abnormality was discoverable. The spleen was not enlarged. The vertical extent of the hepatic dulness was 2½ in. in the nipple line, the lower edge being a finger's breadth above the costal margin. The urine—a catheter specimen—was bile-stained, acid in reaction, sp. gr. 1023, and contained a fair amount of albumen; it deposited numerous bile-stained granular casts, but no leucin or tyrosin crystals; it contained 2 per cent. of urea.

There was no œdema of the legs; these and the arms were equally and perfectly relaxed. The knee-jerks were equal and exaggerated. There were some doubtful purpuric spots on the arms and legs. The fundi of the eye were pale, with normal vessels, and the optic discs were of a primrose-yellow colour. The patient was given 5 grs. of calomel in a nasal feed. At 3.30 the same afternoon she had a convulsion; twitchings began in the face and spread all over the body. At 5.15 p.m. she had another, and at 7 o'clock a third, in which she died.

On reviewing these phenomena, it would appear that the patient had jaundice for a fortnight, preceded by some gastro-intestinal symptoms; then coma of sudden onset, followed by convulsions, and death within nine hours of its onset. With these symptoms it was found that the liver had slightly diminished in size and that albumen had appeared in the urine.

At the *post-mortem* examination it was found that the brain, heart, lungs, abdomen, and spleen were normal. The uterus was slightly increased in size; it contained no fœtus or evidence of pregnancy. The kidneys were a little enlarged; they peeled well and presented no naked-eye abnormality. The liver was considerably reduced in size and weighed only 32 oz. = ⅔ of normal; it was very flaccid; the capsule, which could be peeled off, was loose and wrinkled; the substance of the liver was of a

mottled yellow and red colour, and no normal hepatic tissue could be seen. The bile-ducts were patent and contained no gall-stones. No evidence of phosphorus was detected on distilling portions of the stomach and intestines and their contents in the dark. On microscopical examination it was found that the cardiac muscle-fibres showed some pigmentary degeneration—a change probably quite independent of the fatal disease. There was extensive granular degeneration of the cells lining the convoluted tubes of the kidneys and desquamation of the cells lining Bowman's capsules. This was the cause of the albuminuria and tube-casts in the urine.

In the areas of yellow atrophy in the liver the hepatic cells were granular and their nuclei were hardly visible. The epithelium lining the smaller bile-ducts was proliferating. Round the bile-ducts and vessels in the portal spaces there was some increase of fibrous tissue—due no doubt to the patient's alcoholic intemperance. In the areas of red atrophy the hepatic cells had altogether disappeared. The microscopical examination thus showed evidence of acute necrotic degeneration of the liver cells, with a small amount of cirrhosis. The same poison (? of bacterial origin) which destroyed some and damaged others of the hepatic cells also damaged the secreting cells of the kidneys.

The clinical manifestations of this case were almost, but not quite, typical of the condition. As usual, there was nothing to distinguish the first stage from ordinary catarrhal jaundice. The terminal stage was a little exceptional in that there were no signs of cerebral irritation—headache, restlessness, delirium —preceding the coma; the symptoms were abdominal pain and vomiting. No leucin and tyrosin were found in the urine; but it would seem that these substances are absent in about a third of published cases. The case unfortunately does not shed any light on the causation of this obscure disease. What the poison was, where it was produced, how it affected the brain, whether it accumulated in the body owing to its damaging the renal tissue, are all unknown.

A CASE OF ACUTE YELLOW ATROPHY OF THE LIVER IN A CHILD.[1]

BY

BERTRAM M. H. ROGERS, B.A., M.D., B.Ch.Oxon.,

Physician to the Royal Hospital for Sick Children and Women, Bristol.

THIS case differs in few particulars from the accounts given in the text-books of this disease. It is undoubtedly of rare occurrence even in adults. We have no records of a similar case at the Children's Hospital, and I do not find one has been reported before the Society for the Study of Diseases in Children during the last five years. It has been said that in one of our large London hospitals one is seen in 500,000 cases.

The patient was a boy of 4 years of age, and from the history given by the parents appears to have been a healthy lad till a short time before admission. He was the third of three living children, two others having died in infancy from wasting. Six months before admission he had had measles, but had recovered satisfactorily. Three months before admission as an in-patient he had been attending the hospital as an out-patient "with cough, weakness, and a yellowish tinge in the skin." From this he is said to have recovered, for he was "quite well till about a week ago, when he was noticed to be distinctly yellow, and was very sick, especially at night." He complained considerably of abdominal pain, and his parents said his motions were pale and the water very yellow. On June 1st he was delirious, and complained of headache. He seemed feverish, we were told, but we have no record of a medical man having seen him. The skin was irritable, but there was no rash. We could get no history of poisonous food, and no similar case had been heard of in the neighbourhood. There had been no hemorrhages, rash, sore throat, or running from the eyes.

[1] Read at a meeting of the Society on January 10th, 1906.

The patient was admitted to the Children's Hospital on June 2nd, and he was then obviously very ill, being in a state of noisy delirium. His temperature varied in the first twenty-four hours between 97° and 96°. The skin was intensely jaundiced, very dry, and evidently very irritable, to judge from the numerous marks of scratching. His lips and teeth were covered with sordes. The urine was deeply coloured, contained no albumin, was acid, and the sp. gr. was 1015. The only other symptom was a transient squint. During the second day his temperature rose to 103.6°, and at death on June 4th it was found to be 108°.

Examination showed that the liver extended to two finger-breadths below the costal margin in the nipple line, and the spleen could be felt just below the ribs, both organs feeling firm to the touch. The *post mortem* was made by Dr. Brickdale on June 5th. The organs were all deeply stained with bile, the heart and lungs appearing healthy. The liver weighed 17 oz., this being probably about the normal weight of the organ for a boy of this age. The substance was of a dull red colour, but there were no hemorrhages anywhere. The gall duct was patent, for bile from the gall-bladder could be pressed into the intestine. The spleen weighed 4½ oz., possibly rather larger in size than usual; its substance was soft. The thymus was large, and adherent to the apex of the right lung and pericardium; it was dull red in colour, and in a cavity was a not inconsiderable amount of bright yellow debris, probably the remains of an old abscess. The *post-mortem* notes say that there was some pus in the pelvis of one kidney, but there is no note of a microscopic examination of the fluid, or any reference to a diseased condition of the kidney. I am inclined, speaking from memory, to say that the fluid was only turbid urine.

I have called this case one of acute yellow atrophy, because the clinical symptoms agree better with those of that disease than with any other form of icterus gravis. There was, it is true, no atrophy of the liver; but this can be explained, I believe, by the rapidly fatal termination preventing the shrinking that is often or generally seen in these cases.

What the actual cause of the sudden intense jaundice and fatal result came from has yet to be explained. There must have been some very virulent poison at work, possibly for some time in a mild form, acting on the liver cells, and then either a sudden exacerbation or increase of poison, which rapidly destroyed the liver cells.

That the liver substance suffered a rapid disintegration is evident from the microscopic slides made of the liver. In them no trace of liver cells can be seen. The liver looks as if nothing but a fine reticulum of supporting tissue had been left, "the skeleton of the lobules formed of the fibrillar vascular connective tissue containing a few nuclei." (Rolleston.)

The specimen of urine obtained was unfortunately not examined for leucin and tyrosin. Their presence is not diagnostic, nor does their absence exclude the disease.

NOTES ON A CASE OF SPLENOMEGALIC BILIARY CIRRHOSIS, IN A BOY AGED SIX YEARS.[1]

BY

EDWARD CECIL WILLIAMS, M.B.Cantab.,

Physician to the Royal Hospital for Sick Children and Women, Bristol.

THE notes of this case are of interest, as the number of recorded cases in this country is few, the pathology of the disease is as yet uncertain, as is also the exact rôle played by syphilis, when a history of that disease is obtainable. Then there is the fact that in many of these cases there is an arrest of growth.

The child had always been delicate; two and a half years ago had jaundice and was said to have an enlarged liver, has been yellow ever since. Appetite has always been good. Never had any sickness or diarrhœa. Bowels are regular,

[1] Read at a meeting of the Society on January 10th, 1906.

motions inclined to be white, urine never been dark brown. Never had any pain except in left side occasionally. Mother died of consumption, brothers and sisters said to be healthy. Has suffered from shortness of breath. Legs never swell. A short time ago had blue patches the size of a shilling on legs and abdomen, which were tender.

On admission he was pale, conjunctivæ slightly yellow, skin of body and limbs of a lemon tint, enlarged veins over chest and abdomen. Heart's apex beat is in fifth space in nipple line, no increase in cardiac dulness, hæmic murmur at base, other sounds normal. Lungs appear healthy. Abdomen very distended, girth 26 in., distended surface veins. Liver much enlarged, dulness extending from the sixth rib to the level of the umbilicus, where its free edge can be felt; left lobe of liver can be felt below the ensiform cartilage. Spleen also much enlarged, extending in the mid-axillary line within a couple of finger-breadths of the iliac crest; its notch can be felt on its outer border, about 2½ to 3 inches from the umbilicus; it is dense and smooth. There is no evidence of ascites, no œdema of legs, but on each leg are a few petechiæ. Urine acid, 1c27, no albumin or sugar, trace of bile (Gmelin's test). No enlargement of lymphatic glands. There is marked clubbing of fingers and toes. Height, 3 ft. 4 in.; weight, 36½ lbs.

Blood: hæmoglobin, 62 per cent.; red cells, 5,400,000; white cells, 9,545 per c. mm. Differential count: polynuclear, 38.1 per cent.; uninuclear, 3.3 per cent.; eosinophile, 11.6 per cent.; lymphocytes, 46 per cent.; basophile, 1 per cent.

There is nothing distinctive in the blood picture. On admission his temperature was practically normal until October 12th, when there was a rise of temperature over 101° F., with an increase of jaundice. With the fall of temperature there has gradually been a diminution of the jaundice; now the only trace remains in a slight conjunctival tinge. The motions now are yellow. There has also been, coincident in some degree with the disappearance of jaundice, a gradual diminution of the abdominal girth by 2½ inches. The father thinks the boy's growth during the last 2½ years

has been inappreciable. Gilbert and Fournier have described a juvenile form of this disease characterised by great splenomegaly, of which this case is an example. The clubbing of fingers is also a more constant symptom of the disease than in the adult form. The clubbing is not due to any bony increase, but to hyperplasia of the soft tissues, probably the result of the irritation of toxins. Whether the hepatic or splenic enlargement be primary cannot be ascertained. It is probable the enlargement of both organs may be due to the circulation in the blood of some toxin, which may act selectively more especially on the spleen, and then passing along to the liver with the blood, may be excreted by the small bile-ducts, causing a descending cholangitis; or it may be due to some poison manufactured in the intestine ascending to the smaller bile-ducts, and so to the spleen along the splenic vein. Syphilis does not appear to play a direct part in these cases; there is a doubtful history of paternal syphilis in this case, but none of the usual symptoms of congenital syphilis. Jaundice is never very deep, in fact cases may occur without any jaundice at all. This condition cannot have anything to do with Banti's disease, which is the termination of the splenic anæmia of adults with multilobular cirrhosis and ascites. The second dentition is the earliest date at which the splenic anæmia of adults occurs, and the splenic anæmia of infants is a totally distinct affection, which seldom occurs after the age of two years. At the present time my patient seems to be improving; whether this improvement will result in cure only time can show. When these cases tend to go downhill there is a tendency to ascites, œdema of legs, and albuminuria, with the mixed type of cirrhosis.

Treatment consists in keeping the patient warm and suitably clad. Diet should be plain, and bowels kept well open. As drugs calomel, gr. $\frac{1}{20}$ three times daily, and salicylate of soda, as intestinal disinfectants, seem to answer best. I have not seen any good from active anti-syphilitic treatment. The surgical treatment of draining the gall-bladder is based on the assumption of an ascending cholangitis, but

until there is more evidence on this point it cannot be regarded as an established procedure.

Photographs of this case have also been exhibited before the Society for the Study of Disease in Children.

REFERENCES.

Gilbert and Fournier—*Rev. mens. d. Mal. de l'Enf.*, 1895.
F. Taylor—*Guy's Hosp. Rep.*, 1900 (1897), liv. 1.
Wilson—*Tr. Clin. Soc. Lond.*, 1890, xxiii. 162.
Macalister—*Rep. Soc. Study Dis. Child.*, 1902, i. 199.
Sir T. Barlow and H. B. Shaw—*Tr. Clin. Soc. Lond.*, 1902, xxxv. 155.
F. Taylor—Lumleian Lecture, *Lancet*, 1904, i. 1477 *et seq.*
Parkes Weber—*Rep. Soc. Study Dis. Child.*, 1905, v.

CLINICAL NOTE ON A CASE OF EPITHELIOMA OF TONGUE IN A YOUNG WOMAN.

BY

C. HAMILTON WHITEFORD, M.R.C.S., L.R.C.P.

THE patient was a woman, aged 25, married for four years; three children, all healthy, one miscarriage.

Previous History.—In August, 1903, the patient noticed that one of the left lower back teeth was rubbing a hole in the side of her tongue, and consulted a medical man, who ordered some medicine and a liniment to be rubbed on the face. In March, 1904, she went to a homœopathic hospital, and had some carious teeth removed, and was given medicine and a paint for the tongue. At the end of September, 1904, she saw another medical man, who considered that she was suffering from what was in all probability epithelioma, and, since the growth was absolutely inoperable, ordered her, on the off-chance of the growth being caused by syphilis, pot. iod. gr. xv. and liq. hydrarg. perchlor. ʒ i. *t.d.s.*, which she took for six weeks. This resulted in only very slight improvement of the tongue condition.

Present Condition (November 4th, 1904).—The tongue cannot

be protruded in the least, being fixed to the floor of the mouth. Surface of tongue hard, ulcerated in places, especially along left border, with various depressions and hillocks. Beneath the left side of the jaw, extending to within 1½ in. of its angle, is a smooth, firm, apparently solid mass, 1½ in. in horizontal and 1 in. in vertical diameter, fixed to lower margin of jaw and extending under chin across the middle line, to terminate on right side in a hard nodule, ½ in. in diameter, which is attached to the right margin of jaw 2 in. from the middle line.

On November 10th I examined the growth, the patient being under an anæsthetic. A trocar, passed into the under surface of the tongue in the middle line and inserted into the growth in all directions, passed through firm, almost cartilaginous tissue and evacuated no fluid. A needle passed in the same manner gave a similar sensation. The trocar when passed into the mass on the left side of the jaw bored into hard resisting tissue. A piece of growth was snipped off from the tongue for the microscopist, who found that the specimen was composed of squamous cells.

After History.—The growth extended, and the patient died on May 8th, 1905.

Comments.—The age and sex of the patient made me very loath to admit that the growth was an epithelioma. Exploration of the growth during anæsthesia removed all doubt as to its malignancy, while the microscope demonstrated that the cells of the growth were squamous. Microscopic examination of tumours, while of use for purposes of histological classification, is with our present knowledge (or rather lack of knowledge) of malignant disease totally unable to decide the question of malignancy, of which at present the clinical behaviour of the growth, combined with the naked eye appearance of the fresh section, is the only approximately reliable criterion. Keyser has collected in an interesting paper[1] a large number of cases of epithelioma of the tongue in women. From an average of fourteen groups of statistics, it appears that women are affected to the extent of over 18 per cent. of all cases, which suggests that epithelioma of the tongue is much less rare in women than

[1] *Lancet*, 1904, ii. 829.

is commonly admitted. Personally, in fourteen years of surgical work, I have only seen one other case, and that was in a middle-aged woman, following a gumma of the tongue. Keyser quotes four cases in women under 25 years of age, the youngest being 19. According to Keyser, the chief predisposing causes in women are carious teeth, frequently combined with leucoplacia and syphilis. Smoking does not appear to act as a predisposing cause, since epithelioma of the tongue is not common in women who smoke pipes.

Progress of the Medical Sciences.

MEDICINE.

Graves's Disease.—The treatment of this disease has occupied the attention of many workers and of many writers for some years past. It has been expected, and apparently with good reason, that this disease and myxœdema being the antithesis of each other, and thyroid treatment being so effective in the latter state, an anti-thyroidal treatment should be equally successful in the other. In spite of the numerous and repeated efforts of many pathologists and clinicians, it has to be admitted that treatment based on the theory that exophthalmic goitre is due to excessive or faulty thyroid function has not met with that success which was to be expected. A review of the recent work in this direction by Batty Shaw was quoted in the Long Fox Lecture (vol. xxiii., p. 337). The anti-thyroidin preparation of Merck, prepared by the method of Mœbius, is one of the best available preparations of the serum of thyroidectomised sheep or goats. Mœbius prefers the serum to any preparation of the milk, and one case is quoted by Batty Shaw[1] in which the daily dose, increased to 4.5 grammes, resulted in the disappearance of all symptoms except the proptosis. Such a dose becomes so expensive as to be absolutely prohibitive to all but wealthy patients, and, moreover, a very complete trial made by Hector Mackenzie[2] gave no good effects whatever. Accordingly, treatment by means of the milk, instead of the serum, of thyroidectomised goats has been instituted, and some interesting details of its results were given by Dr. Murray in his recent Bradshaw Lecture.[3] He considers that the preparation called Rodagen is worthy of more extended trial, but should

[1] *Organo-therapy*, 1905, p. 79. [2] *Brit. M. J.*, 1905, ii. 1081.
[3] *Ibid.*, ii. 1250.

be used with caution in doses not exceeding half a drachm. It is put up in tablet form, and sold by the Lanoline Company of Berlin at a price which is not unreasonable or prohibitive for use in special cases for short periods.

Dr. Murray also reports his own endeavours to produce a thyrolytic serum "which should exert a solvent action on the secreting cells of the thyroid gland, and so lead to their gradual and controllable solution and destruction without recourse to operative treatment."[1] Several cases are mentioned in which an anti-thyroid serum prepared from rabbits and goats was used, but Murray reports that no special effect could be traced to the use of this serum. Batty Shaw[2] also reports numerous attempts to produce a serum in one of the lower animals which would be capable of exerting a solvent effect upon the cells of the thyroid body, but he concludes his review with the remark "that experimental efforts to prove the possibility of developing a thyrolytic serum for therapeutic purposes have failed."

It is at least disappointing that there should be no better result than this for all the labour which has been expended on the inquiry. We must not, however, assume that the investigation has concluded, for the field is a hopeful one for continued observation and experiment, and it is not unlikely that success will one day crown the work. For the present we must admit that there is no certainty as regards the results of any form of gland treatment, or of serum treatment, in Graves's disease; accordingly we have to abide by the old lines based on the neuro-cardiac views of the pathology of the disease, and hence in the recent papers there is little advance on the methods of treatment laid down in the older text-books. We have learnt that all medicine is not limited to microbes and sera; the older neuro-cardiac theory still remains as the foundation of our treatment.

Many are the drugs which have been suggested and tried—so many in fact that the natural inference is that none of them has any uniform specific effect, but that all are found to be fickle and uncertain in their results. Accordingly, Mackenzie remarks[3] that drugs hold an altogether secondary place in the treatment of Graves's disease, and he emphasises the need for general hygienic methods. He mentions good food and an abundant supply of fresh air, and adds that "the open-air treatment is perhaps more easily carried out in the case of Graves's disease than in almost any other disease, because the patients are very tolerant of cold, always feeling better when the weather is cool, and they thoroughly enjoy being out in the fresh air. If you carry out open-air treatment in cases of Graves's disease I am sure you will be doing what is good for the patients." As regards change of air and climate, Mackenzie remarks that "the great thing is to get our patients to a place where they can get peaceful quiet and rest, with freedom from noise and

[1] Batty Shaw, *op. cit.* [2] *Op. cit.* [3] *Loc. cit.*

nuisances, where they can have real comfort and wholesome food, and where they can enjoy pure and bracing air among pleasant and cheerful surroundings." He does not advise sea-voyages or popular Swiss health resorts.

As regards food, it is obvious that in a disease where increased metabolism and wasting are so commonly present it is necessary to give an abundant, wholesome, and nourishing diet; hence the combination of good food and fresh air is just such as is commonly the routine practice in a sanatorium for consumptives. If weight is being lost, then an abundant supply of two to four pints of milk a day may be given, in addition to the ordinary diet.

Then again massage may sometimes be employed with advantage, but must be judiciously employed. A prolonged rest in bed is usually needful if the case be severe, but strict isolation is not commonly necessary. Murray observes[1] that the patient "should be induced to lead as quiet and easy an outdoor life as she can, freed as much as possible from anxiety, from undue mental effort, from uncongenial social duties, and from unsuitable physical exertion." So long as the patient is losing flesh the rest should be absolute, and everything must be done to encourage rest of mind as well as of body. Every disquieting influence must be avoided, and every encouragement towards recovery should be given.

Of the drugs from which much is expected, belladonna ranks as one of the first. The theory is that it diminishes the activity of the thyroid gland: this may be the case, but we have no proof that it is so. Murray has found it useful in some cases, and Mackenzie states that patients say they feel better when taking ten minims of the tincture three times a day. It seems to act best when the cardiac symptoms predominate, and it should be especially useful in those cases where excessive perspiration is a marked feature. Professor Mœbius states that he finds belladonna useless, and he wonders why it has maintained its popularity in spite of constant failure.[2]

Murray states that arsenic is one of the most useful drugs for routine treatment, small doses being given. A useful method is to order four or five minims of liquor arsenicalis to be taken

[1] *Loc. cit.*, p. 1248.

[2] The veteran Sir Samuel Wilks, Bart., in a private letter, writes as follows: "For some reason I was thought to be a sceptic in drugs, and so I wrote to say that I did not believe that for every ache and pain there was a drug to cure it . . . but there were medicines which alone and without any other aid had power to raise patients from their supposed dying beds. . . . some other drugs, and amongst them belladonna in Basedow's disease. Cases which were progressing to the bad I believed I absolutely cured by continuing for several months with some intermissions if specific symptoms of poisoning came on. I can't see how I could have been mistaken. I think there is little doubt that this drug has more immediate effect on the complaint than any other. Good doses for a few days produce a marked diminution of the more prominent symptoms."

three times a day, except during one week each month, or during the menstrual period, for six, eight, or even twelve months. When the pulse-rate is over 110, ten or fifteen minims of tinct. convallaria is added to the dose; and if nervousness be a marked feature, then ten grains of potassium bromide may be added for a few weeks at a time.

Other nerve sedatives in addition to the bromides are likely to be useful in a condition where so much nervous irritability exists. Caffein, antifebrin, phenacetin, or antikamnia are often useful.

It is curious to observe how much discrepancy exists in the various views with regard to digitalis and other heart sedatives. Murray states that convallaria commonly gives better results than either digitalis or strophanthus, but Mackenzie states that he has never seen the administration of digitalis or of strophanthus make any difference in the rate of the heart. This is surely not the usual experience, for in the later stages of the disease with actual heart incompetence digitalis acts with mathematical regularity, and in the milder cases the tachycardia is usually modified if not altogether controlled for a time. In the writer's experience digitalis for all purposes gives better and more reliable results than either strophanthus or convallaria, and in Graves's disease it rarely fails to give some relief, as it is the most useful method we have for controlling the too rapid action of the heart as well as counteracting the early, and more emphatically the later, stages of cardiac incompetence; no matter how advanced these may be in a case of Graves's disease, the patient may not be beyond the range of efficient treatment.

Sparteine has often been found to give good results, but its action is by no means comparable with that of digitalis in efficient doses.

Iodides have been so serviceable in the treatment of ordinary goitre that naturally they are often tried in cases of the goitrous tachycardia and exophthalmos, but the experience of Murray is quite the usual one, for he states that it not unfrequently aggravates the symptoms. This, he says, "is not surprising when we remember that thyroid secretion, which contains iodine in an organic combination, is being poured into the blood in excessive quantities," accordingly he considers that iodide of potassium is quite unsuitable and should not be given. On the other hand, Mackenzie states that "preparations of iodine are useful in cases where the goitre is large or where it is increasing in size. Lately I have been giving the syrup of hydriodic acid, which is better borne than iodide of potassium and seems as effective."

Phosphate of soda, in doses of 15 to 20 grains three times a day, has come into some favour, as also has chloride of calcium, but neither Murray nor Mackenzie can say anything better for them than that they will do no harm.

Local treatment of the goitre is commonly recommended. Iodine, so useful in cases of simple goitre, is externally of some use in Graves's disease; the red iodide of mercury ointment is also of some service. In very acute cases, or in acute exacerbation, the ice-bag applied to the goitre does something to reduce its size and to relieve the cardiac and gastric symptoms of the graver kind. In these cases it is sometimes needful to resort to morphia hypodermically and to feeding by rectum. Injections of iodine or of ergotine into the gland have often been tried, but they do not seem to be much in vogue at the present time. The latter drug is often given internally, but it has always seemed to the writer that it must be useless except when acting locally on the gland itself; formerly it was often used in this way by injection into one or other lobe of the gland, and sometimes with very good results, but it was a disagreeable method of treatment which few patients would continue for any length of time. Such preparations of iodine as Iodipin and Iothion should be very useful as local applications.[1]

Electricity has been much used—sometimes the galvanic current, sometimes Faradic has been preferred—but of late years both seem to have dropped into disuse, and the X-ray method has come into vogue. Electrical methods have been diligently used in the expectation that they would influence the cervical sympathetic as well as the thyroid, the eyes and the heart, but they have been for the most part disappointing. I am indebted to Dr. Kenneth Wills for the following notes on X-rays and the thyroid gland, from which it will be seen that further trials of X-ray treatment are most desirable, and may do more than gratify the patient's mind.

X-rays and the Thyroid Gland.—While treating a woman of 52 years for carcinomatous glands with the X-rays, Stegman[2] noticed that a large parenchymatous goitre, which was in the area rayed, decreased in size, losing one quarter of its bulk in six treatments; the clavicular glands were also found to have disappeared as far as palpation was concerned. He then tried a large, soft parenchymatous goitre in a girl aged 21, and found that after two exposures only the circumference of the neck had decreased from 39.8 centimetres to 36, and the dyspnœa was relieved.

Other observers have noticed a similar decrease in the size of parenchymatous goitres, but in many cases no obvious benefit

[1] Dr. Hawkins, of North Petherton, gives the following remarkable history: "An unmistakable case here some two years ago was so bad that I almost despaired as to the result. She was a married woman, whose child contracted scarlet fever: this was communicated to the mother when the Graves's disease was at its worst. The result was that the mother passed through a normal scarlet fever attack, made a good recovery, and the symptoms of her Graves's disease quite disappeared. She is now fat and well, although the goitre is as marked as ever."

[2] *Med. Electrol. and Radiol.*, Aug., 1905.

was observed. However, some good results have been obtained by Görl[1] and Carl Beck.[2]

The former has had "encouraging" results in seven cases. He considers that the action of the rays is upon the parenchyma of the gland itself, and not upon the blood vessels, which are commonly believed to be immediately affected. He finds that these patients have an unusually sensitive reaction to the X-rays.

Carl Beck has practised unilateral extirpation of the thyroid gland, and has followed it up with irradiation to the remainder of the gland. In two cases the results have been gratifying: the tachycardia and the dyspnœa which remained after the operation and the exophthalmos disappeared, also the general health improved. In one of the cases the patient was described as "perfectly cured" in a few months after the operation.

Robert Abbé[3] has had good results in a case of exophthalmic goitre by means of a radium tube embedded in the tumour of the thyroid. Miss A. B., age 21, with enlargement of thyroid and thyroidism, had such great difficulty in breathing on exertion that she was incapacitated from ordinary household duties. On July 28th a small incision, under cocaine, was made in median line, isthmus of thyroid exposed, and a sterilised tube of radium was buried in the enlarged median lobe an inch deep. There were 10 centigrammes of Carec radium (300,000 radio-activity). This was kept in place for twenty-four hours. Improvement was not immediate, but four months subsequently, although there was some tachycardia (105–120 pulse rate), the patient felt well, could play tennis, had lost headache, tremor and ocular protrusion. The thyroid had decreased to one-sixth of its original size in every diameter.

R. Shingleton Smith.

SURGERY.

The Indications and Results of Nephrectomy, especially for Tubercular Disease of the Kidney.—This subject was discussed in a thorough manner at the last Congress of the German Surgical Society in April, 1905. The discussion was opened by Th. Rovsing, of Copenhagen, and it is an abstract of the remarks of that surgeon which we propose to place before our readers.

Rovsing[4] points out that as the first condition which renders the removal of a kidney justifiable is the previous demonstration of the existence of a second kidney capable of performing its functions, so in recent discussions the subject chiefly considered

[1] *München. Med. Wchnschr.*, May 16th, 1905; *Med. Electrol. and Radiol.*, July, 1905.
[2] *Berl. Klin. Wchnschr.*, May 15th, 1905. [3] *Archi. Röntg. Ray*, March, 1905.
[4] *Zentralb. f. Chir.*, Nr. xxx., Brilage, 1905.

has been the best method of obtaining this preliminary information. But, especially in tubercular disease, other questions of importance require earnest consideration when nephrectomy is contemplated, and it was with these that the speaker first dealt. These questions are:—

First. *At what stage in tubercular disease of the kidney is nephrectomy indicated?* The views held on this question may be divided into three classes—the conservative, the moderate, and the radical. According to the conservative view, a localised tubercular deposit in the kidney may heal spontaneously, and therefore in such nephrectomy is not indicated until constitutional and internal treatment have been thoroughly tried and have proved useless and the symptoms of advancing disease are present. According to the moderate view spontaneous cure is so very rare that it should not be expected, but if on exploration the disease appears to be limited to one part of the kidney that part only should be removed, by resection. Lastly, the radical view is that the existence of tubercular disease in one kidney is of itself an absolute indication for nephrectomy.

Rovsing strongly supports the radical view, and maintains that it is unwise to leave any part of the affected kidney, because, even after splitting up the kidney as completely as possible at an exploratory operation, it is impossible to correctly define the extent of the disease.

Secondly. *How far does an extension of the disease to the bladder contra-indicate nephrectomy?*

This question is of great practical importance, because a large proportion of patients first seek medical advice when the symptoms of bladder implication are manifest. It is well established that limited tubercular deposits in the bladder about the opening of the ureter on the affected side do not contra-indicate nephrectomy, and that such deposits heal up after the operation. Until recently the case has been quite different when there has been widespread disease of the bladder, and nephrectomy has then often failed to relieve the symptoms or to prolong life more than a few months.

Rovsing states that formerly in such cases he obtained bad results after nephrectomy, in spite of the subsequent use of sublimate and pyrogallic acid injections, curetting, cauterisation, and even treatment with Finsen or Röntgen rays applied through specially constructed tubes. Latterly, however, he has obtained much better results, which he attributes to treatment by irrigation of the bladder with 5 per cent. carbolic acid solution. In seven out of eighteen cases of extensive bladder disease treated by the methods first mentioned no relief was obtained, but in ten of the remaining cases in which the carbolic method was used a cure followed. He therefore no longer regards extensive bladder disease as a contra-indication to nephrectomy.

Thirdly. *To what extent does tuberculosis in the genital organs*

contra-indicate nephrectomy when associated with one-sided kidney disease? The view has been frequently maintained that nephrectomy is contra-indicated when there is coincident tuberculosis of the genital organs. The author most strongly supports the opposite view. In cases of genital tuberculosis he carefully examines the patient for evidence of renal tuberculosis, and removes the kidney if one kidney only is implicated. Among twenty-four men upon whom the author performed nephrectomy there were ten—*i.e.* 41 per cent.—with genital tuberculosis, four of the patients had this on both sides, six on one side. Orchidectomy or extirpation of the epididymis was usually performed at the same sitting as the nephrectomy. All the patients excepting one were cured, and that one was operated upon under a misconception as to the results of ureteral catheterisation, and had bi-lateral kidney disease.

Fourthly. *Is it possible, and, if so, how is it possible, to determine that a second kidney is present and capable of properly performing its functions?* Even after the introduction of catheterising cystoscopes rendered the collection of the urine from each kidney feasible, other difficulties opposed the solution of the above problem. Cases occur in which a much diseased kidney secretes clear urine free from albumin, for example in cirrhosis of the kidney, cystic kidney, hydronephrosis, non-malignant tumours of the kidney. In other cases the urine from the kidney may contain albumin and pus and yet be able to take up the functions of both organs if the other one be removed. How can one in such cases avoid performing nephrectomy in unsuitable cases, or, what is worse, neglect to perform the operation where it is necessary it should be performed for the salvation of the patient?

Opinions still widely differ as to the value of the various methods of determining the functional capacity of the kidneys which have been brought forward. The principle common to all the methods so far introduced has been the estimation of the functional capacity of a kidney by measuring the work it performs, especially the excretion of certain substances. The following are some of the methods of this kind which have been tried:—

(1) Estimation of the quantity of urea excreted. (2) Estimation of the rapidity and intensity with which methyl-blue is excreted after being injected into a muscle (Achard). (3) Cryoscopy, the determination of the freezing-point of the blood and urine, from which, according to Koranyi, the excretory powers of the kidneys may be inferred. (4) The phloridzin test, which depends upon the rapidity and intensity with which the kidney excretes sugar after the injection of phloridzin subcutaneously.

The methylene-blue test has not proved reliable, since even highly degenerated kidneys may excrete the colouring matter easily. Volcker and Joseph's indigo-carmine test is better, as

it colours the urine much more intensely, but that substance also gives unreliable results.

The estimation of urea, cryoscopy and the phloridzin tests have been widely accepted as giving reliable information of the kind so much desired. Casper and Richter believe all these three methods are reliable, and place the phloridzin test first, cryoscopy second, and the estimation of urea third in degree of reliability. Kümmell considers that a blood freezing-point of −0.6° C. shows that both kidneys are diseased and absolutely contra-indicates nephrectomy. Casper admits that the phloridzin test sometimes gives irrelevant results, but Kümmell declares that cryoscopy has never led him into error.

Rovsing has tried all three methods, but has come to quite other conclusions as to their reliability than the writers just mentioned. With regard to the estimation of urea, he has found that if the quantity of urea excreted by one kidney is normal, then that organ has always good excretory power; but the reverse does not hold true, for a diminished excretion of urea does not show that the organ in question is so incapable of performing its functions that the other kidney cannot be safely extirpated. In thirty-one of Rovsing's 112 nephrectomies the urine contained very little urea, yet the results of nephrectomy were good. Similarly with the phloridzin test, the author never found that a kidney which excreted the sugar well was insufficient, but in nine cases nephrectomy was performed though no sugar at all was excreted. Eight of these cases recovered and one died. The death was not from renal insufficiency but from hemorrhage and septicity.

In fifty cases Rovsing obtained the freezing-point of the blood, and twelve times the results would have led to serious error if they had been relied upon. Errors both of a positive and of a negative kind may result from cryoscopy. In six cases nephrectomy was successfully performed, though the freezing-point of the blood was from −0.6° C. to −0.67° C., yet the one kidney left proved fully capable of performing the functions of the two. In six other cases the freezing-point of the blood was found normal in the presence of advanced disease of both kidneys. That Casper and Kümmell have come to different conclusions with regard to the value of cryoscopy is due, in Rovsing's opinion, to the fact that those surgeons have assumed the truth of the proposition which was to be proved—for example, the proposition that a freezing-point of the blood of −0.6° C. showed that both kidneys were diseased, and that nephrectomy would therefore be fatal—and having assumed its truth, they have not tested its truth in the only reliable way, namely by performing nephrectomy when the freezing-point of the blood was low and watching the results.

Rovsing next considers the results he has obtained in his 112 nephrectomies. In fifty-two cases operated upon before

1901 the mortality was 13.2 per cent.; in sixty cases operated upon since 1901 the mortality was 3.3 per cent.

Kümmell, in discussing the value of cryoscopy of the blood, lays stress on the fact that since he has allowed himself to be guided by its results he has reduced his mortality in nephrectomy from 33 per cent. to 6.4 per cent. Rovsing's statistics show that he himself has reduced the mortality of his nephrectomies to a lower point even than Kümmell, although he has operated in spite of unfavourable findings by cryoscopy and by the phloridzin tests. Further, the two cases he has lost since 1901 were not lost through insufficiency of the remaining kidney, but from bleeding and sepsis.

Rovsing's conclusions therefore on the questions discussed above are:—

(1) That renal insufficiency as a cause of death after nephrectomy does not play the part attributed to it by Casper and Kümmell. (2) That the functional capacity of the kidneys cannot be accurately ascertained by any of the procedures which have been introduced for the purpose. All of the procedures depend upon the measurement of the work being performed by the kidneys, and it may be assumed that procedures depending upon such principles never will give satisfactory results, because a depression of renal function is by no means identical with a diminution of the capacity of the kidney to perform its functions. A normal kidney may work badly for various reasons, *e.g.* because the other kidney is diseased, and not because it is incapable of working well under more favourable conditions. (3) That recent improvements in the results of nephrectomy are not due to the introduction of the cryoscopic and phloridzin methods of estimating the renal functional capabilities. (4) Cryoscopy of the blood is of no value in considering the indications for and against nephrectomy, for it leads to errors in two directions, appearing to show bilateral disease when the disease is unilateral and vice versa. (5) The phloridzin and urea tests are reliable if positive, but not if negative, and that of the two the urea estimation is the better.

The author finally asks: "If my improved results in nephrectomy have not been obtained through the methods of determining renal functional capacity, to what methods can they be attributed? What procedures have enabled me to correctly estimate the functional capacity of the other kidney?" The answer is: "I have to thank catheterisation of the ureters and the careful chemical, microscopical and bacteriological examination of the urine collected directly from each kidney, and the importance of this is much greater than the phloridzin test and cryoscopy. If I have found the collected urine without albumin, blood and microbes, I have considered, as a rule, operative attack to be justified." If in a case of tubercular or other pyonephrosis the author finds the urine from the other

kidney contains albumin, then the deciding-point for or against nephrectomy is the presence or absence of pus and microbes in that urine. If albumin only is found, then it is concluded that it is a toxic albuminuria, and determined by the disease in the pyonephrotic kidney. The latter is therefore removed as soon as possible.

Rovsing sounds a note of warning against using urine segregators instead of catheterising the ureters, for the segregator will often lead to error: for example, in the presence of bladder disease it will lead to the diagnosis of bilateral disease when the disease really is unilateral.

J. Lacy Firth.

DERMATOLOGY.

Seborrhœa and Psoriasis.—The connection between these disorders of the skin must appear evident to all dermatologists. Norman Walker[1] goes so far as to regard psoriasis as merely the extremely dry form of seborrhœa. It is not always evident as to what each writer may signify by his use of the term "seborrhœa"; but taking that it indicates what Sabouraud meant by it, viz. "flux of sebum," there must of necessity be a hyperactivity and hypertrophy of the sebaceous glands. In the condition known as seborrhœic dermatitis, however, the study of the histopathology leads Brimacombe to assert that there is a diminution of activity and sometimes an atrophy of the sebaceous glands, with an increase in size and function of the coil glands, the secretion being mainly sudoriparous.

This is compensatory for the loss of the oil glands, normal sweat containing oil. In psoriasis there is in addition to the disappearance of the sebaceous glands an atrophy of the coil glands, with a failure of the normal secretions of the skin affected. Brimacombe[2] has found a stage in seborrhœic dermatitis which histologically bears a close resemblance to incipient psoriasis, and suggests that the two affections bear the close connection the one with the other that Norman Walker holds in his view of the conditions.

The treatment of lupus erythematosus, or simply "erythematosus" which goes by the name of Holländer,[3] consisted in the administration of three grains of quinine daily, while tincture of iodine was painted on externally. This treatment has been somewhat modified by Moritz Oppenheim. After establishing the freedom from any idiosyncrasy he administers 0.50 gramme quinine morning and evening for three days, while the patches are cleansed with alcohol and ether and iodine painted on. Every third day of the administration 0.50 gramme is added to the dose, until eight half-grammes are being taken per diem. At this dose the patient remains until the foci of the disease are removed, and then the dose is decreased 0.50 gramme every

[1] Norman Walker, *Introduction to Dermatology.*

[2] *Lancet*, 1905, i. 419. [3] *Wien. Klin. Wchnschr.*, Jan. 19th, 1905.

third day. Only when tinnitus or deafness occurs is the treatment intermitted, and it is at once recommenced on the cessation of these symptoms. He claims that no untoward symptoms attend the use of these large doses of quinine; that in all cases tried he has had a successful result; that the treatment should be tried in all chronic cases; and that, inversely, the administration of iodides internally and quinine externally has no effect.

The treatment of ringworm of the scalp by the X-rays is now a recognised addition to the methods of attacking this common and intractable complaint. With the more accurate mensuration of the dosage permitted by Sabouraud's pastilles the danger of doing any harm is reduced to a minimum; and as far as has been recorded, no instance of a dermatitis sufficient to produce a cicatricial alopecia has resulted. The method aims at causing the hair in the affected areas to fall out after one application of the rays, and if this is successful, the use of some parasiticide to destroy the fungus which is not harmed by the rays in any way. In about three weeks the hair falls after a sufficient dose without more than a superficial erythema of a transitory nature. The hair grows again slowly, giving ample time for the effective destruction of the fungus, and in about four to six months the hair is restored completely. This method certainly has several advantages, not the least of which are the painlessness and the rapidity. Great care has to be exerted to ascertain that the treatment has been complete and that no stumps have been overlooked; individual stumps may be treated separately by the croton-oil needling method, but if the procedure recommended by Macleod[1] is adopted, the likelihood of many being left is reduced to a minimum.

As a means of preventing the lamentable interference with the education of children affected by tinea tonsurans, David Walsh[2] suggests the following treatment.

The scalp is shaved, rubbed over with turpentine, washed with soap and water, and then painted with a germicide, such as weak formalin. A ten per cent. solution of ac. salicyl. in collodion is then applied and repeated every second or third day, or sooner if there is any tendency to crack. After a week or ten days the collodion film is forced up by the growth of the hair. The collodion is then stripped off and the hairs come with it, diseased and healthy alike. In this way spread of the disease is prevented, the treatment is shortened, education is not interfered with, a cure can be looked for by systematic and recurrent removal of the hair: the treatment is practically limited to shaving and refilming the scalp every week or ten days, and in addition, if required, the X-rays can cautiously be used through the film.

Syphilis.—In May, 1905, Schaudinn and Hoffmann, of Berlin, announced their discovery **in syphilitic patients of a spirillum.**

[1] *Brit. M. J.*, 1905, ii. 13. [2] *Med. Brief*, Oct., 1905.

This they found not only in surface papules and chancres, but also in deeper tissues and in lymphatic glands. In twenty-eight cases examined the organism was found, and in eight of these it was seen in the glands. Schaudinn terms the organism he describes the "spirochæta pallida," to distinguish it from other similar organisms such as the "spirochæta refringens," which is a saprophyte constantly to be found in the stagnating secretions of lesions other than syphilis, and particularly about the genitals. It is stated that whereas the spirochæta refringens is alone found in lesions from non-specific sources, the spirochæta pallida is only to be found in the fresh juices of specific lesions, such as may be obtained from punctured glands or lesions of the skin. Another organism bearing resemblance to the spirochæta pallida is the trypanosoma equiperdum, which produces a disease in horses not altogether unlike syphilis in human beings.

The spirochæta pallida is described as follows:—

"Long, thin filamentous spiral or corkscrew-shaped organisms, with pointed ends. Length 4.10 mm., breadth at most 0.25 mm. The turns of the spiral number six to fourteen, averaging eight to ten: are narrow, regular and deep.

"Living, it is extremely delicate, weakly refractile and vigorously motile, progresses by rotating on its long axis, and when at rest shows undulatory movements in its whole length.

"In smears it is difficult to stain, and is seen with difficulty, very high powers being necessary for its detection." (Heidingsfeld and Markley.)[1]

So delicate an organism cannot be grown on artificial media, and as it cannot be tested according to Koch's postulates of specificity, no definite statement can be made as to the specific nature of this organism; but it is held that (1) it may be found constantly in untreated primary and secondary lesions, in the glands, and for short periods in the blood.

(2) It is not found in lesions of like character due to causes other than syphilis.

(3) It is found in the experimental lesions produced in apes by inoculation.

(4) It is not found in tertiary lesions, which are not infective.

Metchnikoff and Roux[2] have found the spirilla in twenty-three out of thirty-one monkeys inoculated with syphilis. They have also found them in secondary syphilitic papules in man (especially the younger papules), positions where the possibility of external contamination may be excluded. They were unable to find them in the non-specific lesions of acne, psoriasis, and scabies, and they conclude that they have sufficient grounds for believing that syphilis is a chronic spirillosis due to the spirochætæ described by Schaudinn. These observers never found the S. refringens in the monkeys, and hold that the fact that the S. pallida was not found in all their cases does not

[1] *Lancet-Clinic*, Nov. 25th, 1905. [2] *Ann. de l'Inst. Pasteur*, 1905, xix. 673.

disprove the specificity, as the failure to find the B. tuberculosis does not discount the part played in lupus by that organism.

Numerous observers have since been adding their testimony to the presence of a spirochæta answering to the above description in different stages of the disease.

It was found in the unbroken "pemphigus" bullæ on the palms and soles of a newly-born syphilitic infant (Levaditi). In this case none were found in the blood, which is but the vehicle of its transference; but Buschke and Fischer discovered it in the blood, during life, of a congenitally syphilitic infant.

In the primary indurated sores they have been found in not a few instances (McWeeney, Herxheimer and Hübner, Heidingsfeld and Markley, and others). McWeeney found them in secondary lesions, but could not find them in tertiaries. Jacquet and Sevier failed also to establish their presence in tertiary lesions. Leonard Dudgeon has found them in the fluid expressed from mucous patches; and Stachlein and Noegerath by diluting and centrifugalising blood from the lobe of the ear have found them in three cases of secondary syphilis, but they were unable to find them in healthy, unsyphilitic cases.

Heidingsfeld and Markley have found them in two cases of ulcus molle and in condylomata, as well as in primary and secondary lesions; and Kiolomeneglon and Cube state that they have found them not only in syphilitics but in balanitis, gonorrhœa, and in the decomposition products of carcinoma.

As time goes on other non-specific cases may be found to harbour these spirilla, and in any case it would be inadvisable to make any definite statement yet as to the specificity of the spirochæta pallida. The investigation of the whole group of these organisms is so recent, that it will be well to collect much information before taking so definite a stand as Metchnikoff and Roux. It has to be proved first that it is not a coincident saprophyte symbiotic with the real cause of syphilis.

Syphilis and Yaws.—As a corollary of more than usual interest, considering the closeness of resemblance between the two diseases, and the arguments for and against the two being identical, comes the announcement that Castellani[1] has found spirochætæ in yaws. He was unable to find these organisms in two cases of dry lesions, but in two ulcerated cases he found spirochætæ together with myriads of bacteria. In one case, a Cingalese lad of ten years, presenting no signs of congenital or acquired syphilis, was in the secondary stage of yaws. He had desquamation of the hands and arms, but the lower legs and soles presented several fungoid, roundish, elevated, slightly secretive formations. The spirochætæ were found in these ulcerated lesions. Although he found several varieties of spirochætæ, one variety which Castellani[2] submitted to Schaudinn was recognised by that authority as very closely resembling his spirochæta pallida.

[1] *Brit. M. J.*, 1905, ii. 1280. [2] *Ibid.*

This adds but one more to the **similarities between yaws and syphilis**, which Jeanselme[1] tabulates as follows:—

1. Pains in the bones and joints, which become worse at night.
2. Tendency towards a circular form in the eruptions.
3. Preference for the neighbourhood of orifices of the body.
4. The curative power of potassium iodide and mercury.

As Jeanselme points out, Charlonis proved they are not the same disease by successfully inoculating a person with syphilis who was already suffering from yaws. Though in some respects they resemble each other very closely, yet the chief differences may be classified in the following way:—

SYPHILIS.	YAWS.
Pandemic, acquired by heredity and contagion.	Tropical, acquired by contagion only.
Begins by primary pathognomonic lesion at point of inoculation.	Initial lesions not constant and not differing from later appearances.
Immunity conferred by syphilis almost certain.	Re-infection possible.
Auto-inoculation impossible.	Auto-inoculation possible for a long and unknown length of time.
A hard chancre and other syphilitic signs can be found on patient who has suffered from yaws.	A syphilitic patient can become affected with yaws.
A great variety of eruptions.	Only one eruption, the papillomata.
The eruption, especially in tertiary stage, damages the skin, and leaves indelible scars after cure.	Eruption leaves no scar unless unduly irritated.
Three definite stages: Primary, secondary, tertiary.	All manifestations identical whatever date.
The mucous membrane may be involved.	Mucous membranes escape.
Internal organs may be involved.	No affection of internal organs.
No itching.	Much itching.
Hair falls in secondary stage.	Hair never falls out.

W. KENNETH WILLS.

Reviews of Books.

A Manual of Chemistry, Inorganic and Organic. By ARTHUR P. LUFF, M.D., and FREDERIC JAMES M. PAGE. Third Edition. Pp. xv., 555. London: Cassell & Co. 1905.

This is one of the worst types of cram books, in which both theory and even bare statements of fact are either incompletely

[1] *Ibid.*, p. 1276.

or entirely incorrectly stated. The account of the atomic theory is poor in the extreme, and no student of chemistry could gather from it a sound or even correct knowledge of one of the most fundamental principles of the science. To state, for example, that the fact that all gases obey the laws of Boyle and Charles is a "proof" of Avogadro's hypothesis is entirely incorrect; further than this, to talk about the "proof" of such an "hypothesis" is illogical in the extreme. Although in the preface the authors say that they propose to bring together "those portions of the science that directly or indirectly bear on the study and practice of medicine," yet the problems of solution are not considered worthy of mention; and the ionic theory, which has revolutionised the science, is not even alluded to. On these questions Hamburger has just published his third large volume, showing their great importance in medical learning; this alone is an indication of the rapid growth of this aspect of chemistry, and of its value in medicine. The necessity of familiarising the student with the reasons for assigning formulæ to various gaseous compounds is entirely overlooked, and on the same page the formulæ CO_2 and SiO_2 are to be found without any explanation of their entirely different meanings. The discussion of the theory of Valency might have been written twenty years ago. Incorrect statements abound: The explanation of the action of aqua regia is incomplete; iodine is not monovalent only; the formulæ for the oxides of sodium and potassium are incorrect; the series of equations representing the formation of sulphuric acid are incomplete. To state that the main function of the nitrogen of the atmosphere is to dilute the oxygen, without also saying that it is the world's reservoir of that substance, is most misleading. When discussing the amorphous forms of carbon, not to allude either to coke or say gas carbon, but to state under a special heading that tinder is a variety, appears childish. The discussion of the important question of isomerism is surprising, the first example given, viz. oil of lemons and oil of turpentine, is amazing, and the subdivision of isomeric bodies is absolutely misleading. The problem of the structure of a gas and candle flame is incompletely given, and the modern views of combustion are not considered worthy of mention. To give the production of chloroform from methane as a "test" for the latter substance is absurd. The method described for determining the melting-point of a substance is amusing, and utterly valueless in the large majority of cases. The positions of the hydroxyl or carboxyl groups in salicylic acid are not given. The statement that aniline on oxidation gives the aniline dyes is so misleading as to be practically incorrect. Uric acid has not been synthesised by "heating glycol with urea." But enough has been mentioned to show the value of this production, which certainly ought not to get into the hands of medical students.

Golden Rules of Dental Surgery. By CHAS. W. GLASSINGTON. Pp. 69. Bristol: John Wright & Co. [N.D.].—This little work contains many useful hints which students will do well to follow, and possibly practitioners may with profit recall. The remarks relative to the dentist's manners and general conduct in the surgery, both as to the treatment of his patients and the way he should carry out his work, are very much to the point. The perusal of this little book will remind the reader of the necessity of avoiding the unfortunate habits the writer mentions, and into which it is so easy for all those who are working alone every day to fall.

Sanitary Inspector's Handbook. By ALBERT TAYLOR. Fourth Edition. Pp. x., 455. London: H. K. Lewis. 1905.—This book has already taken a place amongst the reliable guides for sanitary inspectors, and has been brought well up to date in the fourth edition. It can be safely recommended as a concise and accurate handbook.

Guy's Hospital Reports. Vol. LIX. London: J. & A. Churchill. 1905.—A great part of the present volume (about one-third) is taken up by an article on "Traumatic Subdural Hæmorrhage," by W. H. Bowen, M.S., based on the examination of seventy-two collected cases. It is a very exhaustive article, and has been most carefully prepared. The only other article of importance is on "Growths of the Kidney and Adrenals," by Owen Richards, M.B., B.Ch. In this are collected particulars of all the primary renal and adrenal growths which occur in the records of Guy's Hospital between the years 1826 and 1904. Clinical and *post-mortem* records are full; histological examination is lacking in the earlier cases, and not always decisive in the later ones. The value of the series is chiefly clinical, and as the majority of the cases (seventy) were not operated on, it gives a fair picture of the natural course of the disease. We may perhaps express regret that the present volume contains so little of the work of the staff of Guy's Hospital. Probably their time is now so fully occupied by the drudgery of teaching, that they are less able to indulge in original observations than their distinguished predecessors who made the earlier volumes so famous.

The Lister Institute of Preventive Medicine. Collected Papers, No. 1. London. 1904.—The seventeen papers in this volume are full of interest. Dr. George Dean contributes further observations on the Leprosy-like Disease of the Rat, to which special attention was called by Stefansky in 1903 while working at Plague in Odessa; the Mechanism of Agglutination is discussed by Mr. J. A. Craw. Papers by Mr. Plimmer on the Treatment of Cancer with Radium Bromide, and by Dr. C. J. Martin on questions bearing on Antitoxic Immunity, and sundry others on matters of chemical and

physiological interest are here reprinted and collected from the various scientific journals.

Transactions of the American Dermatological Association. Twenty-eighth Annual Meeting, June, 1904. New York: The Grafton Press.—Though not perhaps so interesting as usual this year, the *Transactions of the American Dermatological Association* repay for the trouble of reading. Always presented in a readable form, the book shows at a glance what are the main problems exercising the minds of our Western colleagues. Of the papers included the following are worthy of notice:—Wende and Bentz on the Pathological Analysis of Five Tumours removed from a case of Rhinophyma; Corlett on Post-vaccinal Eruptions, an attempt at classification according to characteristics and ætiology; Klotz on two undoubted cases of re-infection of cured Syphilitics; and especially two papers by Fordyce and Engman on the Affections of the Mucous Membranes in their relation to skin diseases. There is no doubt but that this subject is one of increasing importance. It is, indeed, a matter of surprise that in the past so little importance has been attached to the visible mucous membranes. This partly, no doubt, is because of the relatively rare appearance of lesions in the mouth, but is also due to the fact that the altered appearance of lesions on mucous membranes has led them to be disregarded or misunderstood. It seems strange that Koplik's spots should not have been earlier described, whilst the appearance of lesions of lichen planus in the mouth presents a difficulty of diagnosis from syphilis or leuko-keratosis which may have led to error. But that the mucous membrane, whether visible or not, frequently shares with or alternates with skin in its involvement in diseased conditions is now recognised. The alternations between eczema and asthma have often been discussed, and the "gastric crises" in angio-neurotic œdema have of late been described by Osler and others. Lupus erythematosus is now recognised on the mucous membranes of the nose and mouth, while psoriasis, seborrhœa, impetigo, pemphigus, xanthoma, lupus vulgaris, and leprosy have their places. In not a few cases it would seem that the mucous membranes serve as the portal of entrance of the disease into the system, which disease subsequently will affect the skin more obviously than the mucous membranes themselves. The classification of the combined returns of the dermatological cases for the year always proves of service.

Transactions of the American Surgical Association. Vol. XXII. Philadelphia: William J. Dornan. 1904.—Each year we look forward to the publication of these *Transactions* with a confidence born of past experience that we shall find in them articles dealing with the latest developments in surgery, written by experienced and competent surgeons. The present volume well maintains the high standard set in past editions. All the

papers well repay perusal, and some are of very exceptional interest—for example, that upon the Ankylosis of Joints and Arthroplasty, by J. B. Murphy. Among the many other subjects upon which light is thrown we may mention the following:—Duodenal Ulcer, by Christopher Graham and William J. Mayo; Removal of the Shaft of the Tibia for Osteomyelitis, by G. B. Johnston; Cleft Palate, by T. W. Brophy; Surgery of Nerves, by C. A. Powers, and also by Emmet Rixford; Operations for Primary Carcinoma of the Liver, by L. Freeman; and Thyroidectomy for Exophthalmic Goitre, by C. H. Mayo.

Transactions of the College of Physicians of Philadelphia. Vol. XXVI. Philadelphia. 1904.—An interesting memoir of Robert Bartholow, M.D., commences the volume. From it we are gratified to note that "the best part of his work has found a place in the sum of knowledge available for curing disease, and that the inspiration of his teaching still lives in the precepts of his books and in the practice of thousands of his students." What better proof can there be that he left the world a little better than he found it! One of the most important papers is that by Drs. Edsall and Ghriskey on "A Small Hospital Epidemic of Pneumococcus Infection, with Remarks on the Transmission of Pneumonia and the Methods by which it can be Prevented." It is commonly admitted that pneumonia does not often appear in epidemic form, and that contagion can only rarely be traced; but nevertheless in recent years it has been abundantly shown that pneumonia is an infective disease, and that certain well-recognised bacteria are its usual causes. The literature of the subject leaves no room for doubt that infection may occur (1) through widespread atmospheric dissemination, (2) through the agency of some local source, and (3) through direct contagion from persons sick of the disease. Notwithstanding these admitted facts, "the attitude of the profession toward the control of pneumonia has been somewhat passive; for, in spite of this general knowledge, there are certainly few physicians who adopt more active precautions to prevent the spread of the disease than to have the sputum from pneumonia patients destroyed, and perhaps to utter a gentle warning as to the possible danger of very close contact with those sick of the disease." Accordingly it seems necessary that the profession should be urged to deal more decisively with this important subject, and that our only methods of controlling infections by means of the use of the general principles of preventive medicine should be enforced. Much has already been done as regards tuberculosis, but the fact that these measures may be less successful in pneumonia than in tuberculosis is no argument against their adoption if they are likely to meet with any success at all.

The Edinburgh Medical Journal. New Series. Vol. XVII. Edinburgh and London: Young J. Pentland. 1905.—This, the

centenary volume, opens with an introductory note by the editors, recalling the most important historical events during the hundred years of the life of the *Journal*. It is illustrated with numerous portraits of former editors and the first publisher.

E. Merck's Annual Report. Vol. XVIII., 1904. Darmstadt. 1905.—This report, on the advancements of Pharmaceutical Chemistry and Therapeutics, is manifestly an outcome of an honest desire to furnish a brief and impartial review of the therapeutic acquisitions of the last twelve months. The report is widely appreciated and much valued as a book of reference, inasmuch as it gives the latest views on the numerous new drugs which crowd upon us with claims which are often misleading and not verified by increased experience. A true spirit of impartiality pervades the book. Not only are the new products of the Merck firm described fully, but interesting or valuable preparations from other sources are also described, and the older every-day preparations are included whenever their therapeutic use presents fresh aspects.

Golden Rules of Medical Practice. By LEWIS SMITH, M.D. Sixth Edition. Pp. 126. Bristol: John Wright & Co. 1905.—The author remarks in his preface that "amid so much that is theory, the facts and necessary rules of the practice of medicine tend to become obscured." The practical rules, which the author gives in 126 small pages, are founded on much experience as a practitioner and teacher; they are for the most part elementary axioms intended to assist those who like concentrated pabulum, and who will not give themselves the trouble to read and digest the ordinary text-book.

The Modern Nursing of Consumption. By Dr. JANE WALKER. Pp. 47. London: The Scientific Press Limited.—The nurse who takes pains to make herself acquainted with the elementary facts of medicine and surgery, in so far as they bear on the nursing of patients coming under her care, nearly always becomes much more helpful to the practitioner as well as to the patient, and, with chronic complaints such as consumption, a nurse who, in addition to a sound, general training, has acquired some special experience of the nursing of consumptives, may be of very great assistance. Dr. Walker has had much experience in the treatment of these cases, and her long acquaintance with the need for specially training nurses for patients undergoing open-air methods has enabled her to produce a small manual of very great practical value.

A Junior Course of Practical Zoology. By the late A. MILNES MARSHALL, M.D., D.Sc., and the late C. HERBERT HURST. Sixth Edition. Revised by F. W. GAMBLE, D.Sc. Pp. xxxiv., 490. London: Smith, Elder & Co. 1905.—In the case of a new edition of a book so well known and universally used as "Marshall and Hurst" a review is unnecessary, all that is required is to indicate in what respects the new edition differs

from the previous one. In the present edition, which is edited by Dr. F. W. Gamble, the most noteworthy feature is the addition of accounts of *Monocystis*, *Coccidium*, and *Obelia*—types which have been introduced into the revised Preliminary Scientific course. These accounts are illustrated by two good figures. *Nereis*, whose external characters are now also included in the Preliminary Scientific course, is not described. The additions referred to have not increased the bulk of the book, as certain portions are now printed in smaller type than they were in earlier editions.

The Biology of the Micro-organism of Actinomycosis. By JAMES HOMER WRIGHT, M.D. Pp. 56. 51 plates. Publication Office of the *Journal of Medical Research*, Boston, Mass. 1905.—This monograph is No. 1 of Vol. I. of the publications of the Massachusetts General Hospital, and is a careful and elaborate contribution to a confessedly difficult subject. Possibly the study of bacteriology has not advanced sufficiently far for any complete system of classification, at any rate authorities are still at variance on many important points. There are, no doubt, numerous related organisms in the genus commonly known as actinomyces; the main contention of the author of this monograph is that only one of these, and that not the one usually so accredited, is the pathogenic agent in the disease of actinomycosis, bovine and human. The main points of differentiation, according to Dr. Wright, are the appearance of characteristic granules (*drusen*) in the lesions, and the cultural peculiarities of the organism in a pure state. After describing with commendable detail his own experiments and results, he reviews the literature with the object of showing that a large number of observers have isolated an organism more closely resembling the one he describes than that described by Bostroem, Hartz, and Gasparini, which has been regarded as the true actinomyces bovis. The organism described by the latter he regards as a cultural contamination. Considerable difficulty exists in inoculating experimental animals, which adds to the uncertainty which surrounds the subject. In addition to purely descriptive and experimental results, Dr. Wright advances a theory, at present only conjectural, that the fungus is normally saprophytic in the mouth and digestive tract, and does not grow outside the animal body. He regards the barleycorn so frequently associated with the lesions as a foreign body acting as a predisposing irritant, and not as a true carrier of the organism. He also proposes the name nocardia (which is already used by some authors) instead of actinomyces to designate the genus. The Massachusetts General Hospital is to be congratulated in being able to inaugurate their publications with so scholarly and scientific a contribution to a difficult and important subject.

Indigestion. By GEORGE HERSCHELL, M.D. Third Edition. Pp. 293. London: Henry J. Glaisher. 1905.—Owing to recent

advances in this field, it has been found needful to practically rewrite the whole book, and its usefulness has been increased by the addition of an appendix of 160 pages on the preparation of food by cooking, with especial reference to its use in the treatment of affections of the stomach. Chapters on Gastric Myasthenia and Neurasthenia are followed by one on the Modern Intragastric Methods of Diagnosis. This we consider to be the most valuable part of the book, inasmuch as it gives practical and reliable information on methods which are as yet in little use, and of the value of which there is still much doubt and misconception. The author lays down the dictum that "in any obscure case of gastric disease we require to know the following points before we can make a diagnosis: (1) The position of the stomach and its apparent size; (2) the degree of muscular sufficiency of the stomach; (3) the condition of the gastric juice as to quantity and quality; (4) the presence or absence of fermentation in the stomach; (5) the presence in the stomach of mucus in excess, and in certain cases also blood, pus, and the Oppler-Boas bacillus and fragments of mucous membrane." We are surprised to find that the whole subject of pre-digestion of food, and the use of the various digestive ferments, either for the preparation of food or to assist its digestion within the body, are scarcely mentioned. Benger's pancreatised lentil flour is mentioned on pages 242 and 243, but we do not find any reference otherwise to the dietetic or medicinal uses either of the pancreatic or gastric products. There is no mention even of peptonised milk in either the index of the book or the appendix. This is an omission which a future edition may shortly supply; meanwhile we are informed that gruels and purées may be plain or peptonised, but no information as to the process of peptonisation is afforded.

A Manual of Surgery. By WILLIAM ROSE, M.B., B.S., and ALBERT CARLESS, M.S. Sixth Edition. Pp. xiv., 1350. London: Baillière, Tindall, & Cox. 1905.—Although containing nearly 200 pages more than the first edition, the present issue is actually smaller in size (except for the width of the page), a result which has been achieved by using a thinner paper and by including many of the pictures in the text. Professor Carless is responsible for this new edition, which thoroughly deserves the praise which we have before bestowed on the book. Dr. W. D'Este Emery has supervised the pathological portions, and has rewritten or added chapters dealing with bacteriology and the blood. The sections on modern surgical technique and the surgical aspects of gynecology are welcome additions to a book which can be thoroughly recommended as a reliable, readable, and comprehensive text-book.

A Plea for the more Energetic Treatment of the Insane. By CHARLES WILLIAMS. Pp. 51. London: Henry J. Glaisher.

1905. The title of this brochure appeals to all those who are engaged in the treatment of the insane, and the author has made an earnest and whole-hearted effort to encourage them to increase the recovery rate by perseverance, especially in the less commonly used methods of treatment, and for the attainment of this object he must not be blamed for showing a certain amount of justifiable optimism. There can be no question of the value of treatment by thyroid extract, electricity, the prolonged warm bath, and the Turkish bath in certain selected cases, but the author especially urges their use in certain cases which are generally considered less suitable. No doubt better results would be obtained if the difficulties of carrying out the treatment could be more easily surmounted. In the treatment of insanity by counter-irritation, or by inducing in the body some somatic disease, the question is more difficult. Unfortunately it is the diseases which are serious to life which produce the most beneficial effects, and there must always be great hesitancy in inducing them artificially owing to the lower vitality of the insane and the greater difficulty in nursing, and the author admits this treatment is hardly ripe for wholesale trial. As regards "treatment by persistent argument, coupled with practical proof of the falsity of any delusion," the author states that it is "valuable in thousands of so-called insane people in various asylums, who, except on the subject of their delusions, are sensible and sane enough." In our opinion it is almost valueless except in earliest stages—before certification.

Electrical Methods in the Treatment of Affections of the Stomach and Intestines. By GEORGE HERSCHELL, M.D. Pp. 108. London: A. Siegle. 1905.—This little volume is a reprint of a series of papers published in the *Journal of Medical Electrology and Radiology*, to which has been added a series of clinical histories illustrative of the value of electrical treatment in the various disorders of the gastro-intestinal tract. The papers here brought together are, according to the author, "not intended for the expert, but are written for the now rapidly-increasing number of medical men who have become interested in the subject and, appreciating the value of electricity, wish to make use of it in their daily work." It is interesting to find that the author thinks that with the galvanic, the Faradic, the galvano-Faradic, and sinusoidal currents we can do as much for our patients as we can with the electrical forms of energy of high potential and frequency, and, as he points out, these latter are much more dangerous in unskilled hands. Judging from the clinical records at the end of the book, electrical methods in properly-skilled hands are a very potent means of cure in chronic disorders of the digestion, and the publication of these papers in book-form will do useful service in drawing attention to a somewhat neglected method of treating this troublesome class of cases.

Editorial Notes.

Bristol Royal Infirmary.

Much has been heard of the President's scheme for raising £50,000 for improvements and renovations of this old institution, and the financial statement which he made to the Annual Board on February 14th shows with what energy and success the work has been carried out. The accumulated debt, formed by the deficits of many years, has been wiped out, and the total sum promised or received amounted to £43,577 3s. 8d., leaving a deficiency of only £6,422 16s. 4d. For the first time within the history of the Infirmary in recent years the President was able to report that the ordinary income for the year had exceeded the ordinary expenditure—every single item of receipt had shown an increase and nearly every item of expenditure had decreased accordingly there remained a balance in hand amounting to fifty pounds. We can heartily congratulate the President and the Committee on this result.

* * * *

The Sanatorium for Consumptives.

What may be called a symposium on this subject was published by the *Lancet* in its first number of the new year, and the question is again asked, Do they pay? One cannot but wonder why this question is so often repeated, and why the often repeated answers are not accepted. The writers on this occasion are fairly unanimous in their verdict that the Sanatorium is a neccssary part of the anti-tuberculous crusade, which has already done much to reduce the mortality of the disease, and which may reasonably be expected in the course of some fifty or a hundred years to exterminate the disease altogether. Meanwhile the educational work of the Sanatorium is going on; every patient leaving a well ordered institution of this kind becomes a missionary of good

hygiene, and will be able to preach the gospel of good air to those with whom he may be associated.

* * * *

The following letter from Sir W. H. Broadbent, Bart., who recently paid an official visit to the Winsley Sanatorium on behalf of the National Association, is very gratifying to the Committee which has carried out the establishment of this home for the comsumptive poor:—

84 Brook Street, Grosvenor Square, W.,
February 5th, 1906.

My dear Dr. Weatherly,—Both Dr. Perkins and I were greatly pleased by our visit to the sanatorium. You have solved the problem of efficiency with economy in construction and maintenance, and you had previously set the entire country an example as to the concurrent erection and endowment of such an institution.

The situation is excellent from every point of view, and very beautiful. The architecture of the buildings strikes one as pleasing; and the combination of the two blocks, with the shelters one above the other, is very pretty and picturesque.

The patients' rooms are all that could be desired in the way of cheerfulness, comfort, and free access of air, and I do not know that there is a single improvement I could suggest. I learnt, indeed, a great deal which will be useful to me.

What most astonished me was the small space occupied by the kitchen and its annexes and by the laundry, but the arrangements are evidently good, and experience has shown that the provision for all demands is adequate.

Your sanatorium deserves honourable recognition on every ground.

Yours very sincerely,
W. H. Broadbent.

* * * *

Sanatorium Life.—The following account of a personal experience of life in the sanatorium for consumptives at Winsley is likely to remove many misconceptions and prejudices of which we frequently hear. The Editor thinks it will be of interest to the readers of this *Journal*, and more

particularly to those who have worked so long for the establishment of an institution which is proving to be of great value to the community.

SIXTEEN WEEKS AT WINSLEY.

A RECORD OF PERSONAL EXPERIENCE OF THE OPEN-AIR TREATMENT OF CONSUMPTION.

BY A PATIENT.

BEING run down and feeling unwell, I was advised to consult a specialist, who informed me that my case required complete rest, and advised me to get to a sanatorium.

I pictured in my mind open air with a vengeance, food not of the most appetising nature, raw meat, fat and greasy food which the stomach would turn against, stringent rules, &c.

I made an application to go to Winsley Sanatorium, and in due time I received an intimation that a room was ready for me. Accordingly, taking leave of my friends, I journeyed forth to my new home. One gave me a month, another gave me about ten days to put up with the treatment, as a good many people are under the impression that the rules to be carried out are very stringent, as they might appear to be at first sight.

I arrived at my destination in the afternoon, and was ushered into the reception room. Refreshments were brought me, and after a rest I was presented to the resident medical officer, who, after going through my papers and asking a few questions, dismissed me until the following morning. I was then taken to my new quarters, and was very pleased to find that each patient had a separate room, with every necessary article of furniture, and a lock-up for his own personal belongings.

On my first visit to the dining-room I expected to see a number of patients more or less in a weak state of health, but to my surprise a picture of health and happiness met my eyes—faces with a ruddy complexion almost unknown to the town dweller, and everyone seemed to be on good terms with themselves, happy and contented.

The next day I was given my instructions, and was informed by the doctor that my success greatly depended on my own perseverance. I may say that I had thoroughly made up my mind that it should not be my fault if I did not recover my health. One thing every patient was required to do was to be as lazy as they possibly could be; now, being of an active nature myself, this came a bit hard at first, but like a good many other things, use becomes second nature, so I did not find the time hang as heavily as one might expect with nothing to do.

No doubt a good many would wonder, as I did, what kind of treatment is carried out to meet with the success that this institution is certainly doing. The general treatment, I soon found, was open air, thorough cleanliness, good food and plenty of it. A good many are under the impression that there is a kind of a stuffing process at these institutions similar to the fattening of turkeys, but I did not find this to be the case. You are certainly expected and encouraged to make good meals; but before you are a resident many days you find you have an appetite that would shame a good many animals and surprise yourself. There is also a certain amount of rivalry amongst the patients, each liking to outdo the other; as weighing day comes round

this causes an enthusiasm, the consequence of which is that you gain a little weight every week, you are feeling better, and nothing succeeds like success. I will here give a brief outline of the treatment.

Open Air.—You are practically in the open the whole of the time. In the daytime you are out in the open, wet or fine; at night when you are in bed you are certainly under cover, but the bedroom windows are very large and of course wide open, so you are in the same temperature whether inside or outside of the building, night and day. The dining-room is on the same principle, windows wide open, therefore you are almost immune from taking cold, in fact a cold is almost an unknown thing amongst the patients. My visit lasted through two of the autumn and two of the winter months, and I was not troubled with a cold, but I contracted one as soon as I came away.

Baths.—You are instructed to have a wash from head to foot every morning, warm or cold as the doctor directs. I have known a good many have a cold bath morning after morning, I did myself; this no doubt seems very strange for invalids, and especially in the winter, but I feel sure anyone taking up this morning luxury would be well repaid.

Now comes the most important item—*food*. Well, I must say it takes you a day or two to get used to it, but as I said before you soon do get used to the diet. For breakfast there was a general fare for every day of the week, consisting of porridge, fried bacon, ham, fish, &c., with tea and the usual pint of milk that you were always expected to drink. For dinner there was a change of diet daily, consisting of raw and cooked beef, mutton, pork, steak puddings, a plentiful supply of vegetables, with various kinds of puddings, mostly milk puddings, with the usual quantity of milk. Supper varied—tripe and onions, sausages, fish, puddings, bread and butter, cheese, &c., and the usual quantity of milk. The food generally was well cooked, except of course the raw meat, and this was served up in such a manner that the most delicate stomach could take it. This is only served for a limited period, according to the nature of the illness, then you are put on ordinary diet. The food, I think you will agree with me, is not to be complained of, although we are apt to find grumblers in all classes of society. I suppose it is one of the blessings Nature endowed us with to be critics on everything except that which concerns our own actions.

In a very short time the patients come to know each other, and it is quite possible to find suitable associates, which helps to pass away the time. There are plenty of games such as chess, draughts, cards, &c., and good books to be obtained from the library by those fond of reading. The patients would get up little concerts amongst themselves, and kind friends would visit the sanatorium to entertain us, which all helped to break the monotony of the daily routine of life, in fact I did not find it half so dull as I expected. There are nice walks all around for those who are able to take them, and places of interest to visit in the near neighbourhood. I found the doctor and staff always ready and willing to do any little service for the comfort and welfare of any patient, and there was a marked absence of any partiality. Every patient was personally interviewed once a day at least, and in other cases as often as was necessary. The doctor was a man of keen observation, and very soon read every patient like a book. Your progress was noted from day to day, and your instructions as to exercise, &c., given you.

There were certainly some remarkable cases which came under my

own observation during my stay, and it may be of interest to some to know what it is possible to do. In one case a man had been in bed for ten weeks; he was taken out of his bed and brought to the sanatorium, was carried to his room, and of course put to bed. In one week he was up and walking about, in a fortnight he had gained seven pounds in weight, and in one month he could take a walk of two or three miles without being fatigued. Another case was that of a man taken to the institution on his back a good many miles in a conveyance, he had also been in bed several weeks. In one week he was up, and did not require to go to bed again except for his usual rest. He began to put on four and five pounds a week in weight; during four months he gained thirty-two pounds. He left the institution practically a new man and able to go back to his work. Another case, a female patient, gained as much as thirty-three pounds in four and a half months. Of course these are a few exceptional cases, but I could mention several cases where three, four, and five pounds have been gained in one week. On the other hand, I have known others who have not been so fortunate, who require longer treatment than the time that is allowed, which is four months, without special permission; but every patient, I am sure, will learn a lesson they will not forget the remainder of their life—the value of fresh air, cleanliness, &c. I feel certain that a good many like myself feel thankful there is such a place as Winsley Sanatorium—those who are not over blessed with this world's riches, and are unable to pay three or four pounds a week for treatment at a private institution, as I am given to understand you are expected to pay.

I would advise any person who requires to get such treatment, and is fortunate enough to get to Winsley Sanatorium, in a free bed or a maintained bed, to go with a good heart, make up their minds to carry out the instructions as far as hes in their power, and good improvement if not complete success will be their return. I am sure there are no very stringent rules laid down but what are within the reach of the most feeble.

I would advise any and every one who has an opportunity to visit this institution; they will find that they are welcome, and will be shown round to inspect the buildings and grounds, and will have the pleasure of seeing a model sanatorium. I feel sure that if some of our philanthropic friends were to visit and see the good work that is being carried on there would be no lack of subscribers.

Great praise is due to the instigators and managers of this institution, for there appears to be one object in view, and that is to find out the best means of combating this terrible disease, consumption. Of all the good work done and resolutions passed by the Bristol Health Committee none will surpass that of taking the twenty beds at the Winsley Sanatorium for those poor mortals who otherwise may have found an early grave.

I shall look back upon my visit with thankfulness for some time to come, not only for the benefit received, but also for the kindness shown to me, and the many friends I made during my residence. I can assure you that there are worse things than life in a sanatorium.

N.B.—The Editor has received from the medical officer of the sanatorium the following particulars of this case:—

A man, aged 35, admitted on August 29th, 1905, in appearance typically phthisical, with a well-marked hectic flush, with a family history of phthisis, a cough since February, loss of weight, night

sweats, and some loss of voice. Physical examination showed evidences of early infiltration at the right apex, and some fibrotic changes at the left: there was retraction under the left clavicle with marked myoidema. Both vocal cords were much thickened and pale. The sputum was fairly characteristic, although the examinations for Tubercle Bacilli gave a negative result. There was evening pyrexia, 99° to 101.5°, during the first few weeks.

After four months' routine treatment he was discharged with no signs of active disease, with a normal temperature, having gained fifteen pounds in weight, and having proved himself capable of performing light work with impunity. On March 7th, 1906, patient was feeling well, with little cough, and no sputum, and was well able to do full work, which he had been doing since leaving the sanatorium. He appeared to be in good health, the disease having been effectively checked.

* * * *

Dr. Northrup's remarks on living in good air (air de luxe) (*Medical Record*, 1906, lxix., 181) are very appropriate. He remarks: "Our rooms are practically bell jars. . . . The thin, dry man, and his fat, perspiring neighbour sit down together in the bell jar and amiably exchange exhalations, gases, and body emanations. . . . Long experience teaches that close air is not quickly fatal. By air de luxe I do not mean five-dollar canned air made by the hired man. I mean another kind, delivered day and night without extra charge; one that does not smell of rubber nor dry the throat, that does not go to waste in the struggling, nor annoy the dying. It is not one of those physical products controlled by syndicates, pooled by trusts, and cornered by kings. The poor throw it away, and the rich pick it up—in Switzerland. . . . It is air to spare."

An article on clean air by Dr. Mitchell Prudden in the same journal (p. 165), remarks: "Infectious diseases of the respiratory organs are steadily increasing as people are more and more huddled together in offices, dwellings, travelling conveyances, and places of public assemblage. A large part of these diseases are directly traceable to infectious material cast off, in spitting, coughing and sneezing, from the mucous membranes of those suffering from various grades of local disease, and floating for longer or shorter periods in the air as dust or invisible spray."

Sanatorium treatment must inevitably be disappointing if we admit all cases whether incipient or advanced; hence the imperative need for a careful classification of cases before admission, lest a hopelessly advanced case may prevent an

incipient one from obtaining the radical cure which he has a right to expect from sanatorium life. It is easy to expect too much, the public commonly does, but the pathological imagination of the doctor should indicate to him the folly of expecting that every case of phthisis is likely to be cured by any sanatorium methods. The finding of suitable employments for patients after the sanatorium course is a difficult one, but it must be admitted that few patients can safely resume their previous occupation without a serious risk of relapse. A paper by Dr. Lucas (p. 12) calls attention to this and other difficulties in the effectual treatment of phthisis amongst the poorer classes, but we hope that the report (shortly to be published) on the first year of working of our own sanatorium at Winsley will show that it is well worth while, both from therapeutic and economic aspects, to do everything possible for the poor; whilst the disease is allowed full scope with them it will be quite useless to deal with it amongst the rich, and all attempts to stamp out the disease will be futile. It must be accepted that these sanatoriums are expensive, and that the public are not very willing to find the money for their equipment, but it is agreed on all hands that the disease cannot be controlled without them, and that the anti-tuberculous crusade must be pushed at all costs if we are to succeed in our efforts to subdue and eradicate this ubiquitous and fatal disease.

* * * *

The Proposed University of Bristol.

If one may judge from the applause with which references to the foundation of a University are invariably greeted, it would appear that a practical scheme for realising the idea would at once meet with enthusiastic support. It is, however, no less obvious that until some responsible body puts forward such a scheme, makes it clear that there is a need for a University in Bristol, and establishes the principles of its constitution further progress is impossible.

It is, perhaps, not too much to say that the term "University" has little meaning to the average individual. Some connect it only with Oxford and Cambridge, others

think of a University as an examining body, like the London University on its external side, while many have heard of the Universities which have recently been established in Liverpool, Manchester, Leeds, Birmingham, and Sheffield, and, without understanding the details of their constitution, think that Bristol, as the next greatest city, should follow their lead. In this there is not only natural pride, but good sense; for as these Universities are established on the same principles, and have almost indentical constitutions, it is more than likely that the foundation of a similar University in Bristol will be to the advantage of the city.

A University should not be in any sense merely an examining body. Its function is to decrease the sum total of human ignorance, and to teach its students to take part in this work. Those occupations known as the "learned professions"—the church, medicine, chemistry, law, engineering, &c.—involve the solution of problems of a more or less difficult character. Efficiency in these professions demands not only a wide knowledge of the facts and of the theories relating to them, and in some cases a certain manipulative skill, but the power of examining and collating facts as they appear, and of interpreting the results.

Training for such professions should then involve as an essential feature a course of study under teachers who are themselves investigators, and who have these principles always in view. The courses of study should be arranged so as to give the student the best possible training for the profession he has in view, and the examinations should be of such a character as to test his attainment at the end of the course. It must be clearly understood that the course of study is the essential, and the examination, which is conducted by the external examiner and the teacher jointly, is subordinate to it. Degrees awarded on this basis carry weight according to the reputations of the teachers; they are fast attaining a far higher value than the "external" degrees, which, except in medicine, demand no course of study and encourage cramming.

Before Bristol can apply for a University charter facilities for University education in the city must be extended and

organised so as to avoid wasteful competition. Before this can be brought about the meaning of the term "university education" must be clearly established. No body of men more clearly understands the value of sound professional training, designed with a view to increasing the powers of observation and inquiry, and directed by men who are themselves experts and specialists, than do the members of the medical profession. The extension of this principle to other departments, and the elimination of the cramping influence of external examining bodies, will only be possible under the University, and it is this fact that the medical profession may help to keep in view.

There is no reason why the Medical School of the University should not be as strong as any other in the country. The Faculty of Science will be able to provide for preliminary medical studies in the departments of chemistry, physics, zoology and botany in a manner equal to any other provincial school. Further provision will have to be made for the teaching of intermediate medical subjects, and sufficient funds should be forthcoming to properly equip and endow such departments as those of anatomy and physiology. It is very essential, both for the sake of students who are following the regular course, post-graduate students, and men in practice in the city and district, that ample provision should be made for study and research in such subjects as pathology, bacteriology and the more specialised and scientific subjects allied to medicine. The establishment of lectureships and fellowships and the foundation of properly-equipped laboratories will make it possible to utilise the vast quantity of clinical material which is available.

The details of a scheme for the organisation of the Medical Faculty of the University can of course only be arrived at after careful inquiry.

* * * *

The Royal Sanitary Institute.

The Annual Congress of this Institute will be held in Bristol in July. The preparations for this meeting are well advanced. At a meeting held in the

Guildhall on February 2nd, under the chairmanship of the Lord Mayor of Bristol, an Executive Committee was appointed, and it was announced that the Right Hon. Sir Edward Fry, P.C., had accepted the office of President. A very full programme of meetings and receptions is arranged, and a Health Exhibition will be held in the Drill Hall from July 9th to 21st. The sanitary officers of the city and many members of the Corporation are taking a warm interest in the meeting, which is likely to be quite as successful as congresses usually are in Bristol.

* * * *

The National League for Physical Education and Improvement.

A BRISTOL BRANCH of this League was inaugurated at a large meeting in the Colston Hall, held on February 12th, 1906, under the presidency of the Lord Bishop of Bristol. The objects of the League were stated in our last number, and have since been further formulated as follows:—

1. To organise all power working for racial improvement, and concentrate the now scattered forces contending against such moral and social evils as Overcrowding, Infant Mortality, Intemperance, &c., which all imperil the future of the race and the stability of our nation.

2. To establish a National or Central Institute for Physical Education with a Training College and Examining Body—to draw into this much-needed work men and women of the educated classes.

3. To arrange the physical examination of school children, with remedial opportunities where defect is present.

4. To spread knowledge of the common laws of health by means of lectures and the dissemination of literature.

This meeting was largely attended, the large hall being well filled, and the audience appeared to be much interested in the subject as it was put before them by the various speakers, who had come to represent the central organisation of the National League for the purpose of inaugurating the first of many branches which are to be formed in all parts of the country. The Central Council consists of a very large number of well-

known persons who have taken an interest in the subject, and the Executive Council intends to make the League a power in the land.

The speakers on this occasion were The Right Hon. Sir John Gorst, P.C., Sir Lauder Brunton, M.D., D.Sc., F.R.S., Mrs. Bramwell Booth, Major-Gen. Sir Fred. Maurice, K.C.B.

At the end of the meeting it was resolved on the proposition of Professor Lloyd Morgan, supported by Judge Austin and Dr. R. Shingleton Smith, "That a Bristol branch of the National League for physical education and improvement be formed, with the Lord Bishop as President, and a committee composed of those present by invitation on the platform, and others who have signified their consent, with power to add to their number." The Lord Mayor expressed his hearty sympathy with the objects of the meeting, and trusted that everything possible would be done to promote the success of the League.

Sir Lauder Brunton, in pointing out the objects of the League, spoke of the deplorable and unnecessary infant mortality, far exceeding the massacre of the innocents at Bethlehem by King Herod, and he added that in order to stop this waste of human life and energy a great deal could be done by proper physical training. For this purpose there must be some national central institute for physical education, with a trained examining body, which must have authority to issue diplomas, without which no person should be allowed to teach. In this way unity would be established throughout the country, and we should get the best possible training in every part of it. The establishment of such an institute was proposed by Miss Theodora Johnson in November, 1904, and the proposal was now beginning to take definite shape; but all children were not alike, and the physical exercise that was barely enough for one was enough to exhaust and injure others, and in cases of which he had known the heart had been seriously damaged by over-strain. It was, therefore, absolutely necessary that there should be an examination into the physical condition of children, so as to ascertain how much they could do with advantage and without injury. All the children should be made to learn the general laws of health, the evils of spitting, the use of fresh air

with avoidance of chill, the care of the teeth, and the mischief that may be done by tobacco and alcohol. The improvement of the health and physique of the nation was a very complex problem. It needed the co-operation of everyone, and especially it required the co-ordination of all bodies already working to attain the end. Many of these bodies were not even known to one another, and in order to ensure their co-operation a National League for Physical Education and Improvement had been founded. They hoped to save the babies, to help the children, to train the youths, to raise up a race of sturdy men and women, and to lessen the number of the diseased, the feeble, the unemployed, and the criminals.

Dr. Shingleton Smith pointed out that the self-denying ordinance of the abolition of disease and the improvement in the health of the people had been the glory of the medical profession of the past. Much had been already done. Even within recent years we all could remember the abolition of typhus, the almost complete extinction of small-pox, the control of malarial fever, and the gradual diminution of the death-rate from tuberculous diseases; these facts showed that the ultimate control and elimination of many diseases are not Utopian dreams of the enthusiast. So much has the mortality of phthisis been reduced during the last two or three decades, that we may reasonably look forward to the not far distant future when the tubercle bacillus may be as extinct as the dodo. The medical profession could not do otherwise than favour in every way possible the functions of the league proposed, as it showed that they would have the assistance of the State, the Church, and the public in supporting their endeavours to improve the health and the physique of the nation.

Notes on Preparations for the Sick.

Steriloid Milk (Powder).—BRITISH STERILOID MILK CO. LTD., 48 Dawson Street, Dublin.—This is a yellow flaky powder, prepared from whole milk and guaranteed to contain 27 per cent. butter fat in the dried state. It is said to be sterilised,

and to keep well for fourteen days. It is directed to be made with boiling water into a paste, and then reduced to the specific gravity of new milk. We have found the proportions recommended, viz. one ounce of the powder to eight fluid ounces of milk, produces a liquid of too low a specific gravity. About six ounces of water to the ounce gives a specific gravity of 1030–1035 at 15.5° C. We prepared samples of the milk, using strict antiseptic precautions, and found that at incubator temperature it kept about three days, and at room temperature (50°–55° F.) about five days. If, however, the product was boiled for fifteen minutes, it was perfectly sweet at the end of fifteen days. We also prepared samples of various specific gravity and estimated the fat. The specific gravity was taken at 15.5° C. The results showed: Sp. gr. 1035, fat 2.2 per cent. sp. gr. 1030, fat 2 per cent.; sp. gr. 1025, fat 1·4 per cent.

The flavour of this preparation closely resembles that of sterilised milk. When carefully prepared it yields a homogeneous fluid, but on standing for some hours there is a tendency for a deposit to separate out. The clot formed by rennet is very slight and flocculent.

Lysoform.— BRITISH LYSOFORM CO., London.— This substance, which has been shown to be a powerful antiseptic and germicide, should be a valuable addition to practical therapeutics. Its great advantage lies in the fact that it has little toxic power, and may thus be used with safety when substances like perchloride of mercury might lead to unpleasant results. It is also non-irritant to the hands, and as it is a powerful deodorant, is remarkably suited to the needs of the out-patient physician or surgeon or the pathologist in the form of a lotion— 2 or 3 per cent. being quite strong enough for these purposes. As an ordinary surgical antiseptic stronger solutions may be used. A 5 per cent. solution destroys pyogenic cocci, and is sufficiently powerful as a lotion for wounds and antiseptic compresses.

The Vapour Method of Anæsthesia.— Dr. JAMES T. GWATHMEY, of New York, sends us a notice of a new apparatus which he has invented for the vapour method of anæsthetising, and he claims for his instrument the following "unique features":— That chloroform or ether can be given singly or combined in any desired proportion; the ability to increase or decrease the air or oxygen without at the same time increasing or decreasing the anæsthetic; the mask is an anatomically correct fitting facepiece, the rim of which is hollow and perforated around the inner margin to allow the vapour to escape, otherwise identical with a folding Esmarch mask. There is an arrangement which allows of a few drops of chloroform being added if necessary

during the induction stage, as, for instance, in the case of a vigorous alcoholic patient. The inhaler gives a maximum chloroform vapour of 2 per cent. and a minimum of 0.1 per cent.

Robinson's Prepared Barley.—KEEN, ROBINSON & Co., London. —This is so well known to the medical profession, and has been in use for so many years, that its utility has been thoroughly established by actual experiment. It may be used in many ways, but is especially useful for the preparation of barley water, which in the case of young children is very beneficial in preventing the clotting of milk in the stomach, and with older children and adults is also of some value as a food, and can generally be readily digested.

An examination shows that it consists largely of carbohydrate in the form of barley starch, hence when required for feeding purposes it should be used in conjunction with milk, when a highly nutritious product results.

Robinson's Groats.—Like the preceding preparation, "Robinson's Groats" has for many years been a household name. Whereas "Prepared Barley" is essentially an adjunct to food, this preparation possesses more of the characteristics of a true food, in that it contains a good proportion of proteid matter. Judging from a microscopic examination, oatmeal figures prominently in its composition, the starch grains having a very characteristic appearance. It yields a very appetising gruel, which has many valuable properties, and which in most cases is readily digested, even by delicate persons. A preparation which has stood the test of time can but receive our approbation.

Mustard Bran; Mustard Leaves; Mustard Oil.—J. & J. COLMAN, 108 Cannon Street, London.—The latter preparation has been before the public for a considerable number of years, and has gained a reputation as one of the best stimulating liniments known to those concerned in such matters.

Its stimulating effect is largely due to the presence of essential oil of mustard, a pungent body known chemically as "allyl isothiocyanate." Whilst acting as a somewhat vigorous stimulant, it is not liable to cause any unpleasant effects, and can be used with safety even in the case of young children.

Brand's Nutrient Powder (Deuce's Patent).—BRAND & Co. LTD., Mayfair, W.—The above preparation is recommended by the makers as a useful addition to the diet of invalids and others

requiring specially nourishing food. The quantity for administration is one teaspoonful or more, mixed with milk, beef tea, &c. A chemical examination shows that it consists chiefly of proteid, but it is not very soluble in cold water.

An experiment was made by mixing a little of the powder with water and a trace of hydrochloric acid and pepsin, the temperature being about that of the body, or a trifle higher. We consider that experiments "in vitreo" with such bodies are rather severe, but the result was satisfactory. Solution soon began to take place, and after a time the resulting product was found to be rich in peptone. Judging from these results, it should be readily digested and assimilated by the alimentary system.

Emulsion of Cod Liver Oil.—W. PITCHFORD & SON, Bristol.—This is a specially prepared emulsion, containing 50 per cent. of the finest Norwegian oil, the emulsifying agent being eggs. It does not undergo separation on standing, a common fault with many of the usual preparations of this type. The taste of the oil is well disguised, elixir of saccharin and almond being among the flavouring agents. It can be recommended where a palatable and reliable preparation of cod liver oil is required.

Pleated Compressed Sanitary Towels ("Tabloid" Brand).—BURROUGHS, WELLCOME & Co., London.—These possess several points of superiority over ordinary commercial sanitary towels, and are in every way the most convenient and satisfactory. They are made of materials of exceptional quality, specially prepared for the required purpose, their highly absorbent properties being particularly noteworthy. The delicate texture of the outer covering ensures absolute freedom from the slightest sense of discomfort in use. After being highly compressed each is enclosed in an efficient protective covering, perfect cleanliness being thus secured. The extremely small space which they occupy renders them particularly convenient when travelling. Four sizes are issued—Nos. 1, 2, 3 and 4, of which No. 4 is the largest. Each size is issued in packages of one dozen.

Soloids (Eucaine Lactate).—BURROUGHS, WELLCOME & Co., London.—Of the salts of eucaine the lactate is the most generally useful. In anæsthetic power it is equal to cocaine salts, but is non-toxic, non-irritating, and does not constrict the blood-vessels or dilate the pupil. It is extremely soluble, 20 per cent. solutions being readily made with cold water. The stability of ts solutions is such that they may be sterilised by boiling without undergoing decomposition.

Two per cent. solutions are used for ophthalmic purposes,

and for laryngoscopy and rhinoscopy; 4 to 8 per cent. for the nose previous to the use of the galvano-cautery; 6 to 8 per cent. for removal of tonsils; and 2 to 4 per cent. for catheterisation and for endoscopic examinations. In dental work 2 per cent. solutions are commonly used. In general surgery, eucaine is used as a local anæsthetic by hypodermic injection of 4 per cent. solutions. Though the strengths of solution here indicated are those commonly employed, yet on occasion 20 per cent., and even much stronger, may be desirable.

The following preparations are issued: "Tabloid" Hypodermic Eucaine Lactate, gr. $\frac{1}{3}$ and gr. 1; "Soloid" Eucaine Lactate, gr. 1 and gr. 5.

The Library of the Bristol Medico-Chirurgical Society.

The following donations have been received since the publication of the List in December:

February 28th, 1906.

L. M. Griffiths (1) ... ... 7 volumes.
J. H. Loch, M.D. (2) ... ... 2 ,,
The Medical Officer of Health of the London County Council (3) ... ... 1 volume.
The Staff of Middlesex Hospital (4) ... ... 1 ,,
The Council of the Otological Society (5) ... ... 1 ,,
Pennsylvania State Medical Society (6) ... ... 1 ,,
The Royal Medical and Chirurgical Society (7) ... 1 ,,
R. Shingleton Smith, M.D. (8) ... ... 11 volumes.
Scholastic Trading Company (9) ... ... 2 ,,

FIFTY-NINTH LIST OF BOOKS.

The titles of books mentioned in previous lists are not repeated.

The figures in brackets refer to the figures after the names of the donors, and show by whom the volumes were presented. The books to which no such figures are attached have either been bought from the Library Fund or received through the *Journal*.

Allbutt, T. C. ... *On Professional Education* 1906
Allbutt and H. D. Rolleston, T. C. [Eds.] *A System of Medicine.* Vol. I. 2nd Ed. 1905
Allchin, W. H.... *The Harveian Oration* ... ... (8) 1903
Andrews, C. Beck and H. *Treatise on Photographic Lenses* .. ... (8) [N.D.]
Ashby and G. A. Wright, H. *The Diseases of Children* ... .. 5th Ed. 1905
Beck and H. Andrews, C. *Treatise on Photographic Lenses* ... ... (8) [N.D]
Beevor, C. E. ... *The Croonian Lectures, 1903* ... ... (8) 1904
Bell, B. ... ... *A Treatise on the Hydrocele* ... ... (1) 1794
Bell, J. ... ... *Discourses on the Nature and Cure of Wounds.* 3rd Ed. (1) 1812
Bibliographique universel, Manuel abrégé du Répertoire 1905
Brinckman, A. ... *Notes on the Care of the Sick* ... ... (1) 1879
Bulkley, L. D. ... *Relations of Skin Diseases to Internal Disorders* 1906
Catalogue of the Library of the Royal Medical and Chirurgical Society. Supplement IX. ... ... (7) 1901
Chance, E. J. ... *Bodily Deformities.* (Ed. by J. Poland.) Vol. I. 2nd Ed. 1905
Chapman, W. L.... *The Sequelæ of Gonorrhœa in both Sexes* 1905
Church, Sir W. S. *Presidential Address to the Royal College of Physicians* (8) 1904
Edmunds, W. ... *Pathology and Diseases of the Thyroid Gland*... ... (8) 1901
Egypt, Health and Pleasure in ... ... (8) [N.D.]
Giles, A. E. ... *Gynæcological Diagnosis* 1906
Goodhart, J. F.... *The Diseases of Children.* (Ed. by G. F. Still.) 8th Ed. 1905
Gould, G. M. ... *Biographic Clinics.* Vol. III. 1905
Gubb, A. S. ... *Algiers as a Winter Resort* ... . (8) 1905
Haegler, C. S. ... *The Cleansing, Disinfection and Protection of the Hands.* (Tr. by C. H. Watson) 1906
"Hazell's Annual" *Guide to the New House of Commons* ... ... 2nd Ed. 1906
Huggard, W. R. *A Handbook of Climatic Treatment*... 1906
Janeway, T. C.... *The Clinical Study of Blood Pressure* 1904
Liebreich, R. ... *Atlas der Ophthalmoscopie* ... ... (2) 1863
Mackenzie, S. C. *Medico-Legal Experience in Calcutta* ... . (2) 1891
Orotava as a Health Resort... ... ... (8) [N.D.]
Rolleston, T. C. Allbutt and H. D. [Eds.] *A System of Medicine.* Vol. I. 2nd Ed. 1905
Royal (The) Medical and Chirurgical Society of London, Centenary 1805—1905 1905
Shelly, C. E. ... *A Preliminary Inquiry concerning the Milk Supply of Schools* 1906
Smee, A. H. ... *Suggestions as to Lines for Future Research* ... ... (1) 1881
Stewart, G. N. ... *A Manual of Physiology* ... ... 5th Ed. 1906
Taylor, F. ... ... *Some Disorders of the Spleen* ... ... (8) 1904
Thorne, L. T. ... *The "Nauheim" Treatment of Chronic Diseases of the Heart* .. .. 2nd Ed. 1906
Weininger, O. ... *Sex and Character.* (Tr. from 6th German Edition.) 1906
Woollacott, F. J. *The Nursing of Infectious Diseases* ... ... [1906]
Wright, A. E. ... *Anti-Typhoid Inoculation* ... ... (8) 1904
Wright, H. Ashby and G. A. *The Diseases of Children* ... ... 5th Ed. 1905

TRANSACTIONS, REPORTS, JOURNALS, &c.

American Journal of Obstetrics, The ... ... Vol. LII. 1905
Archives of the Middlesex Hospital ... ...(4) Vol. VI. 1905
Bristol and Clifton Directory, Mathews's ... ... (1) 1853
British Almanac, The 1906
British Journal of Children's Diseases, The ... ... Vol. II. 1905
British Journal of Dermatology, The ... ... Vol. XVII. 1905
British Medical Journal, The... ... ... Vol. II. for 1905
Brooklyn Medical Journal, The ... ... Vol. XIX. 1905
Catalogue of Books, The English, 1905 1906
Dermatological Society of Great Britain, Transactions of the Vols. IX., X. 1902–04
Edinburgh Medical Journal, The ... ... N.S., Vol. XVIII. 1905
Gazette des Hôpitaux de Toulouse 1905
Glasgow Medical Journal, The ... ... Vol. LXIV. 1905
Hazell's Annual... 1906
Hospitals—St. Bartholomew's Hospital: Statistical Tables, 1903 (8) 1904
St. Thomas's Hospital Reports... ... ... Vol. XXXIII. 1905
Intercolonial Medical Journal of Australasia ... ... Vol. IX. 1904
Journal of Medical Research, The... ... ... Vol. XIII. 1904–05
Journal of Tropical Medicine, The ... ... Vol. VIII. 1905
Lancet, The ... ... Vol. II. for 1905
London County Council, Report of Medical Officer of, for 1904 ... (3) 1905
Medical Directory, The 1906
Medical Press and Circular, The ... ... [Vol. CXXXI.] 1905
Medical Society's Transactions, The ... ... Vol. XXVIII. 1905
Mercy and Truth ... ... Vol. IX. 1905
New Hampshire Medical Society, Transactions of the 1905
Nordischen Kongresses für innere Medicin, Verhandlungen des Fünften (1904) 1905
Ophthalmological Transactions ... ... Vol. XXV. 1905
Otological Society, Transactions of the ... ... (5) Vol. VI. 1905
Pennsylvania Medical Journal, The ... ... (6) Vol. VIII. 1905
Progressive Medicine ... ... Vol. IV. 1905
Public Health ... ... Vol. XVII. 1904–05
Publishers' Circular, The ... ... (9) Vols. LXXXII., LXXXIII. 1905
Scottish Medical and Surgical Journal, The ... ... Vol. XVII. 1905
Smithsonian Report, 1904 1905
Society for the Study of Disease in Children, Reports of the... Vol. V. 1904–05
West London Medical Journal ... ... Vol. X. 1905
Whitaker's Almanack 1906
Who's Who 1906
Year-Book of Scientific and Learned Societies, The... 1905
Zentralblatt für Chirurgie 1905

MEETINGS OF SOCIETIES.

Bristol Medico-Chirurgical Society.

December 13th, 1905.

Mr. JOHN DACRE, President, in the Chair.

Dr. P. WATSON WILLIAMS showed the following cases: (*a*) A patient operated upon for double **frontal sinusitis** and **maxillary empyema.** (*b*) A case of **fibroma** of the left **vocal cord.** The frontal sinuses were dealt with by the Killian operation, and radical operation was performed on each of the maxillary antra with very successful results.

Dr. BERTRAM ROGERS read notes on a case of **acute atrophy of the liver**, and showed sections and lantern slides illustrating the histology of the liver in the disease. (See p. 40.)

Dr. F. H. EDGEWORTH read a paper on a case of **acute yellow atrophy of the liver,** and showed specimens and lantern slides obtained from the case. (See p. 37.)

Dr. E. C. WILLIAMS read notes of a case of **splenomegalic hypertrophic biliary cirrhosis** in a child aged six years, and showed the patient. (See p. 42 of this issue of the *Journal*.)—Dr. SHINGLETON SMITH alluded to a case of acute yellow atrophy of the liver he had seen in the Bristol Royal Infirmary seventeen or twenty years previously. The patient was a man with an alcoholic history, and he died in a comatose condition. The extraordinarily flabby condition of the liver had been characteristic.—Dr. FORTESCUE-BRICKDALE thought it would be better to name Dr. Rogers's case acute toxæmic jaundice. The weight of the liver had been normal for a child of that age.—Dr. CAREY COOMBS thought the atrophy described by Dr. Rogers was probably the terminal phase of a chronic process, as the boy had had a transient jaundice six months before death, and the liver was increased in size and density by proliferation of the connective tissue. The speaker quoted various cases to show that a scale of toxæmic jaundice could be constructed, progressing in intensity from biliary cirrhosis on the one hand to acute yellow atrophy on the other. These processes, which are similar in essence though differing in intensity, are analogous to those set up by phosphorus, the lesions of yellow fever, and other poisons. They are to be ascribed to poisonous bodies,

probably bacteria and their products reaching the liver in the blood-stream, most likely by the portal vessels, and excreted by the bile. In their passage through the liver bile-ducts the hepatic parenchyma is damaged and inflammatory reaction in the connective tissue is set up. The liver has been shown to have the power of partially destroying the deleterious effect of bacterial toxins circulating through it; if this power be brought to bear upon the toxins causing toxæmic jaundice, the liver will suffer comparatively little, a certain degree of interstitial hyperplasia being the main histological result. This hyperplasia is gradually increased by repeated doses or a steady stream of the poison. Finally the immunising power of the liver is overwhelmed either by its having undergone gradual exhaustion or by the arrival of a larger dose of poison, and a rapid atrophy of the parenchyma occurs, bringing about a fatal result (as in Dr. Rogers's case). Dr. Edgeworth's patient, on the other hand, succumbed at once, presumably because the immunising power of her liver was too small or because the dose of poison was too large, and consequently the parenchyma of her liver rapidly underwent irreparable destruction. Hexner has shown that large single doses of ricin and abrin, inoculated into rabbits, produce cellular destruction, while smaller repeated doses of the same substances cause the formation of fibrous tissue and embryonic bile-ducts.—Dr MICHELL CLARKE thought it might be well to keep the name acute atrophy for the more acute cases. He had published two cases of the kind in which the disease had followed cholera infantum in children, and these cases seemed to show more clearly than many the probable toxæmic nature of the disease. He would prefer to name Dr. Rogers's case one of acute cholæmia with necrosis of the liver. He was of opinion that implication of the kidneys played a large part in the final stages of the disease, and it was not until the kidney was attacked that the fatal coma ensued.—Dr. ROGERS thought it was curious that the disease was not more common if it could be engendered by infantile diarrhœa. The overgrowth of fibrous tissue in the liver in this case had been slight.

Mr. T. CARWARDINE read notes on the following cases:—(*a*) **perforated duodenal ulcer,** (*b*) **perforated gastric ulcer,** (*c*) three successful **prostatectomies** (with specimen).—Mr. KYLE alluded to the possibility of troublesome symptoms following prostatectomy, and mentioned the trouble he had had in one case in getting the supra-pubic opening to close permanently. This result was finally obtained after dilating a stricture which had formed in the deep urethra. Another patient, operated upon two or three years ago, had had no complications, and had obtained complete relief from his previous symptoms. —Mr. MOLE mentioned a case he had operated upon. The patient had died from pneumonia about ten days after the operation.

January 10th, 1906.

Mr. JOHN DACRE, President, in the Chair.

Mr. H. F. MOLE gave a demonstration on the **anatomy** and **surgical anatomy** of the **temporal bone,** illustrated by lantern slides, specimens and stereograms. This demonstration was highly appreciated by the members of the Society, and the speaker was congratulated upon its excellence by Dr. P. WATSON WILLIAMS and Mr. J. LACY FIRTH.

Dr. P. WATSON WILLIAMS read a paper on **Why defective nasal respiration impedes growth and development.** (For a full report of this paper see p. 17 of the present issue of the *Journal.*)—Dr. E. C. WILLIAMS asked at what age the removal of adenoids gave the best results. Adenoids were met with frequently in children from the country, and it was a question whether humidity had a causal effect.—Dr. HARRISON alluded to the fact that with nasal respiration one gained a better sense of having filled the chest than with mouth breathing.—Dr. WATSON WILLIAMS replied that the feeling of chest-fulness alluded to was a subjective one. In his opinion infective conditions had much to do with the production of adenoids.

Mr. H. G. KYLE read notes on a case of **hydatid cyst of the liver.** The patient was a young woman. In September, 1903, a small lump which she had had for some months on the thoracic margin on the left side began to enlarge. When seen by the speaker there was a large tumour in the upper part of the left side of the abdomen. It extended down to the umbilical level and just over the middle line to the right, and moved freely with respiration. No fluctuation could be made out. The heart was displaced upwards. The long history seemed to exclude sarcoma as a diagnosis. It was found on exploration to be a large hydatid cyst in the left lobe of the liver. It was incised, and the endo-cyst removed and the fibrous capsule sutured to the parietes. During the after-treatment there was free suppuration. No daughter cysts had been seen.

Dr. J. R. CHARLES read a paper on **Fright in its relation to medicine.** (See p. 23 of the present issue.)—Dr. NIXON mentioned the case of a man who was liable to attacks of jaundice which he attributed to fright.—Dr. J. O. SYMES expressed the opinion that many cases of chorea were directly due to fright apart from all rheumatic association, though the rheumatic child, being often of a nervous excitable temperament, was more likely to suffer than other children. He did not agree that cold played a part in the causation of rheumatic chorea. The micro-organism of rheumatic fever was least active in the coldest months.—Dr. WATSON WILLIAMS thought that Graves's disease might be a secondary effect of fright. He considered that in aggravated cases the condition

of the thyroid gland with hyper-activity, followed in course of time by atrophy and myxœdema, was analogous to the so-called paralytic secretion of salivary glands following section of the sympathetic. The syndrome of Graves's disease was that corresponding to the secondary effect of intense fright, and might be due to disorder of centres for emotion, higher than the somatic reflex centres in the bulb, but below the highest cortical volitional and ideational centres.—Dr. SHINGLETON SMITH alluded to Warren's story of catalepsy being induced by a thunderstorm. A case in which a copious purpuric eruption on the upper part of the body had followed a thunderstorm was probably due to a fit having been induced by fright, and the eruption resulted from the fit.—Dr. CHARLES replied. He failed to see that any differentiation of cases of chorea into these due to fright and those due to rheumatism could be established.

February 14th, 1906.

Mr. JOHN DACRE, President, in the Chair.

Dr. E. W. HEY GROVES showed the following card specimens:—(*a*) **tumour of the adrenal gland**, (*b*) **parosteal sarcoma of finger**, (*c*) **primary sarcoma of thyroid**, (*d*) **sarcoma of testis**, (*e*) **duodenal ulcer** which led to fatal hemorrhage.

Dr. E. C. WILLIAMS showed a child with **hemiplegia**.

Dr. J. O. SYMES read a note on **The arthritis accompanying erythema nodosum**. In the speaker's experience not more than 10 per cent. of the patients with erythema nodosum gave a history of rheumatic fever. The decades of life in which the affection was most frequently met with corresponded with those in which rheumatic fever most often occurred. The eruption was little, if at all, influenced by salicylates. Not only was the history of rheumatic fever rarely obtained in these cases, but when joint trouble was found associated with the erythema that trouble was of a different type to that of rheumatic fever.—Dr. HARRISON said the subject was one in which he had taken much interest, and some years ago, from a consideration of the cases he had seen, had come to a somewhat similar conclusion as Dr. Symes. He quoted some remarks he had made on the subject in an opening address given before the Dermatological Society. In spite of a careful attempt to trace his patients he had never seen a single case in which the affection had recurred. His youngest patients had been of three and four years of age, his oldest of fifty-one and fifty-three. If you see one case you are almost sure to see others about the same time.—Dr. KENNETH WILLS alluded to the relation between erythema nodosum and erythema multiforme. It had occurred to him that erythema nodosum might be classed in the group of

erythemata included in erythema multiforme. Though salicylates had no influence upon the pain, he was under the impression that they shortened the duration of the disease.—Dr. F. H. EDGEWORTH said that he had given up the use of salicylates in the treatment of erythema nodosum. The effect of these drugs in erythema multiforme was very different. Now that the organism of rheumatic fever had been discovered it would be well worth trying to find what the organism was which caused erythema nodosum.—Dr. CAREY COOMBS described a case of erythema nodosum in which the joint trouble at first was unlike that of rheumatism, but later the patient had developed typical rheumatic joints.—Dr. SYMES replied that he was certainly more inclined to regard erythema nodosum as a specific fever than as a mere skin affection. It often affected two or more members in a family, was associated with grave constitutional symptoms, and seemed to confer some degree of immunity.

Dr. J. J. S. LUCAS read a paper on **Some points in the prognosis of pulmonary tuberculosis.** (See p. 12 of this *Journal*.—Dr. ELLIOTT said that in treatment pure air was the important thing, but he did not think that cold and damp air was beneficial.—Dr. SHINGLETON SMITH thought the speaker had been rather too pessimistic. The profession knew that the public expected too much from sanatorium treatment. He thought the great problem of the future was to make suitable provision for the employment of the patients who were discharged from the sanatoria.—Mr. ROGER WILLIAMS alluded to the fact that he had in a large number of *post-mortems* found that 20 per cent. of the subjects presented evidences of healed tubercular processes in the lungs. In the last fifty years the mortality of phthisis had decreased threefold, and two-thirds of this decrease had preceded the discovery of the tubercle bacillus. He was inclined to attribute the improvement to better food and better sanitation, and he thought better food had had the greatest effect. Better food was the result of greater prosperity. England had a low mortality from tubercle as compared with other European countries. The permanent inhabitants of the Riviera had a high mortality from the disease, and yet we sent our patients there. The mortality decrease from phthisis had occurred during a period in which urbanisation had flourished. The speaker believed that in the future the congregation of the victims of this and other diseases would be regarded as unwise.—Dr. LEONARD alluded to consumption as met with in factory hands. He had followed up cases in which young girls had been accepted at a factory with signs suggestive of incipient phthisis, and found that only a small proportion had subsequently suffered from development of the disease, and he thought that vastly more people recovered from phthisis than was generally thought.—Dr. EDGEWORTH thought the prognosis in phthisis was worse with basic than with apical

disease, and worse with one base and one apex than with two apices diseased. He had seen one or two cases recover, though the rapidity of the pulse had been great, without the temperature accounting for it. For recovery the intestinal tract must remain healthy.—Dr. MICHELL CLARKE alluded to the great difficulty of prognosis in individual cases. If physical signs were limited to one apex the X-rays often showed there was disease in the other lung. The influence upon prognosis of a previous attack of pleurisy was worth consideration. He thought such a history might be a good point, as showing that the case would at any rate run a long course. He still thought the old idea that if the sound lung came across the sternum the case would be favourable was correct. Open-air treatment had a great effect in lessening the temperature. The pulse must be observed for long periods if correct inferences were to be drawn from it. Prognosis depended upon whether the tendency to caseation or to fibroid change was in the ascendancy.—Dr. CHARLES alluded to the effect of different diatheses upon the course of phthisis.—Dr. LUCAS replied. He believed the disease broke out again after apparent cure in the vast majority of people who had it, and belonged to the lower and middle classes. The *post-mortem* evidence of healed phthisis pointed to the disease in the cases as having been of very small extent. It was the rapid, low-tension pulse that was of bad omen.

Dr. CAREY COOMBS read a paper upon **Colitis polyposa** and showed a specimen of the disease. (See p. 31 of this *Journal*.) Dr. MICHELL CLARKE thought the disease might have resulted from infection, and might be an early stage of ulcerative colitis.—Mr. ROGER WILLIAMS suggested that diffused syphilis might have been the cause.—Dr. HARRISON said that clinically the case had been one of chronic diarrhœa. There had been no history of syphilis.—Dr. COOMBS thought if there had been a tendency to ulceration it should have become evident in the specimen, as the patient had suffered for six months. He thought that some parasitic cause had been at work.

J. LACY FIRTH.
H. F. MOLE (*Hon. Sec.*).

Obituary Notices.

FRANCIS JOHN CRANE PARSONS, M.R.C.S., L.R.C.P.

THIS well-known and public-spirited townsman of Bridgwater died on the 10th of February, at the age of 58. He had been

ill for some months, but he declined to give in to ordinary human ailments, and continued his work steadily till within three days of his death.

Frank Parsons, as he was always familiarly called, was the second son of a Bridgwater surgeon of considerable eminence, who had a large operative and consulting practice, and who was a man of strong character and marked ability.

Frank was educated at the Crewkerne Grammar School under Dr. Penny. He was a good cricketer, and was popular and generous. In those days our time in school was almost entirely given up to a study of Latin and Greek, and Parsons's verses and translations were, if not excellent, of the usual merit. His elder brother was a scholar at Eton, and passed high into the Indian Civil Service.

At about seventeen years of age Parsons entered King's College Hospital. He was a steady worker without being exceptionally clever or persevering. He was possessed of good common sense and of the power of observation, and although only two men in each year could be appointed to the post of House Physician, and Parsons was not working for University distinction, was in his year one of the two selected. The House Physician had at that time charge of all the medical beds in the hospital, the physicians being George Johnson, Baring Garrod, and Lionel Beale.

After such an experience, and with the introduction of his father, young Parsons rapidly gained a very extensive practice at and around Bridgwater. Possessed of good private means, there was no need for him to be overanxious, but he was fond of his profession and understood it, so that for many years he was much consulted, and until the time of his death he continued in active practice.

Frank Parsons had broad sympathies, and took an active interest in almost every matter that concerned the town of Bridgwater, of which he may well be said to have been a distinguished citizen, and there, as also among all his old fellow-students and colleagues, his memory will long be cherished.

HENRY WILLIAM COLLINS, M.R.C.S., L.S.A.

Mr. Collins, of Wrington, was the eldest son of the late Rev. E. Collins, of Cowslip Green, Wrington, and was born at Geelong, Victoria, in the year 1847. He was brought over to England at an early age, was educated at the Godolphin Grammar School, Hammersmith, was then apprenticed to Dr. Horace Swete, who was at that time in practice in Wrington, and later on went through the curriculum at Guy's Hospital, where he devoted himself to his medical

studies, also to football, rowing and swimming. He took his L.S.A. in 1870, and his M.R.C.S. in 1871. He then returned to Wrington, and bought the practice to which he had been apprenticed. Later on he joined with his *confrère*, the late Dr. Chadwick, and continued in practice until October, 1902, when he retired owing to failing health. He did not enjoy his retirement long, as he was soon after stricken with the disease which recently proved fatal in his 59th year.

Among Freemasons his loss will be as deeply felt as it will be among his medical brethren. He was a distinguished member of that body, and held high rank in the Province of Somerset.

In character he was a man who possessed to a peculiar degree the power of making himself universally loved, and it was that power, combined with his medical skill, which contributed so largely to his undoubted success.

He was always keen on his medical work, was an excellent practitioner, and a frequent attendant at medical meetings in Bristol.

Local Medical Notes.

University College, Bristol.—I. Walker Hall, M.D., Ch.B. Vict., has been appointed Professor of Pathology. J. M. Fortescue-Brickdale, M.D., Ch.B. Oxon., has been appointed Demonstrator of Physiology. The following examination successes have recently been recorded: *M.S. Lond.:* E. W. Hey Groves. M.D., B.Sc. (University Medal). *M.B., B.S., Lond.:* H. Devine, W. J. H. Pinniger. *Group I.:* J. F. Blackett, J. B. V. Watts. *B.C. Cantab.:* F. F. Leighton, F. Shingleton Smith. *F.R.C.S., Eng.:* E. W. Hey Groves. Preliminary Scientific Examination. — *Inorganic Chemistry:* G. S. Applegate. *Organic Chemistry:* R. M. Hiley. Conjoint Board of England.—*First Examination: Chemistry and Physics*—G. H. Griffiths. *Second Examination: Anatomy and Physiology*—S. H. Kingston, E. R. Sircom, P. Sinnock, M. W. Morrison. *Final Examination: Medicine*—J. S. Avery,* C. S. Rivington. *Surgery*—F. Shingleton Smith,* M. R. O. Wilson, R. O. Bodman.* *Midwifery*—H. W. Goodden, R. E. Thomas, W. W. King, C. S. Rivington. *D.P.H. Lond.:* P. G. Stock, M.R.C.S., L.R.C.P. *L.S.A.: Surgery* (Section I.), *Medicine* (Section I.), *Forensic Medicine*—P. Moxey.

Bristol Royal Infirmary.—*Honorary Consulting Physician*—Henry Waldo, M.D., C.M. Aberd., M.R.C.P. *Honorary*

* Completes Examination.

Consulting Surgeon—A. W. Prichard, M.R.C.S. *Honorary Physician*—F. H. Edgeworth, M.B., B.C. Cantab., D.Sc. Lond. *Honorary Surgeon*—T. Carwardine, M.B., M.S. Lond., F.R.C.S. Eng. *Assistant Physician*—J. A. Nixon, M.B., B.C. Cantab., M.R.C.P. *Assistant Surgeon*—E. H. E. Stack, M.B., B.C. Cantab., F.R.C.S. Eng. *Pathologist, Bacteriologist, and Director of Clinical Laboratories*—I. Walker Hall, M.D., Ch.B. Vict. *House Physician*—A. L. Sheppard, M.B., B.S. Durh. *Senior Resident Officer*—A. R. Short, M.B., B.S., B.Sc. Lond. *Resident Obstetric Officer*—F. Rudge, M.R.C.S., L.R.C.P. *Casualty Officer*—A. J. Wright, M.R.C.S., L.R.C.P. *Junior House Surgeon*—L. Shingleton Smith, M.R.C.S., L.R.C.P.

Health of Bath.—At a meeting of the Sanitary Committee held on January 29th, the Medical Officer of Health (Dr. W. H. Symons), reported that during 1905 there were 985 births and 808 deaths registered in Bath. Estimating the population at 50,000, the birth-rate corresponded to 19.7 per 1,000, and the crude death-rate was 16.16 per 1,000. The corrected death-rate was 13 per 1,000, being the lowest rate recorded for Bath, except in the year 1903, when it was 12.3 per 1,000.

Cardiff Infirmary.—In spite of the £20,000 which has been expended during the last five years in order to make improvements in this institution, it will shortly have to make further enlargements for the accommodation of out-patients. Only 178 patients can now be received in the wards, and the necessity for increased accommodation is shown from the fact that early in this year 336 patients were awaiting admission. It is now decided to re-arrange the out-patient and nurses departments, the estimated cost of which is £7,000, towards which sum £1,000 has been offered by an anonymous donor provided the remainder is promised during the present year.

The Royal West of England Sanatorium, Weston-super-Mare.—During the past year 2,470 cases were admitted, the daily average number of patients being nearly 200. It has recently been decided to build an annexe to the institution, and this will be used by the nursing staff, and the wards which they at present occupy will give more accommodation to patients. It will be utilised for any infectious case should an outbreak arise in the sanatorium. The committee has received £900 from a legacy which will be devoted towards the building, and it is hoped that the additional sum required will be shortly forthcoming.